Roll No. .....

Total Pages : 3

01-S

BAE/S-17
ENGLISH
Paper – A

Time : Three Hours] [Maximum Marks : 40

Note : All questions are compulsory.

1. (a) Explain the following with reference to the context :

Let me not to the marriage of true minds admit impediments. Love is not love which alters when it alteration finds, or bends with the remover to remove.

OR

All human beings are subject to decay,
And when fate summons, Morarchs must obey,
This Flecknoe found, who like Augustus young
Was called to empire, and had governed long; 4

(b) Respectfully but firmly, I disagree. Love is a great force in private life; it is indeed the greatest of all things; but love in public affairs does not work. It has been tried again and again : by the Christian civilizations of the Middle Ages and also by the French Revolution.....

OR

Given a preference for boys over girls that many male-dominated societies have, gender inequality can manifest itself in the form of the parents wanting the newborn to be a boy rather than a girl. 4

2. Answer in short any *five* of the following :

(a) What comes within the compass of 'Time' ?

(b) Name the poet of the poem 'Death Be, Not Proud'.

(c) Where was the little boy born ? (The Little Black Boy)

(d) Explain "Great Lord of all things, yet a prey to all;"

(e) 'All's over then,' What is over ? (The Lost Mistress)

(f) Where is God found, according to Tagore ?

(g) How can we make the world better ?
(Laugh and Be Merry)

(h) Who are the two neighbours in the poem 'Mending Wall' ?

OR

(a) What good things have machines done for us ?

(b) Apart from poetry, what else did Mahadevi write ?

(c) What does Nehru say about Gandhiji ?

(d) Name the four Varnas Manu talks of.

(e) Why did Della require the money ?

(f) Who was the banker ?

(g) How did Ratan remember her family ?

(h) Describe the 'sheer animal beauty' of Pagli. (1×5=5)

3. (a) Attempt a critical appreciation of

Let Me Not to the Marriage of True Minds

When You Are Old.

(b) Summarize the story 'The Postmaster'.

OR

What message does the story convey in 'The Refugees ?
(7×2=14)

4. What is Nehru's message to the children as given in the chapter ?

OR

What is the principle of graded inequality on which the Hindu social order is based ? 8

5. Do as directed :

(a) Affection (Change into adjective)

(b) Use correct form of the verb :

I _____ this movie last week. (see)

(c) Glorious (Change into noun)

(d) Blood (Change into verb)

(e) A (learn) speaker. (1×5=5)

पतिदेव यह कह कर टाल देते कि इससे खाँसी हो जाती है, यह खट्टी है, यह सड़ी है। थोड़ी दूर आगे चलकर उन्हें सिगरेट की आवश्यकता पड़ी। एक दुकान पर जाकर पैकेट खरीदा और सुलगा कर चल पड़े। यकायक अगस्त्य बोला, "पापा मुझे सिगरेट ही ले दो।"

Roll No. .....

Total Pages : 4

BAE/S-17

02-S

ENGLISH–B

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt all questions.

1. Attempt any *fifteen* of the following sentences :

(a) Fill in the blanks with proper articles wherever needed :

(i) John is ill and has to go to _____ hospital.

(ii) I feel tired, as I went to _____ bed late last night.

(iii) The door was opened by _____ servant.

(iv) It gives me _____ pleasure to do it.

(v) I like to give _____ useful present.

(b) Fill in the blanks with appropriate prepositions :

(i) I am _____ your beck and call.

(ii) The frog jumped _____ the pond.

(iii) She is senior _____ me.

(iv) There was a cigar _____ his lips.

(v) It is two _____ my watch.

(c) Supply the correct form of the verb :

(i) Agastya _____ very tall. (be)

(ii) Aarushi _____ novels. (write)

(iii) Bread and Butter _____ his usual breakfast. (be)

(iv) Many American workers _____ (go) to work in their own cars.

(v) My servant _____ me two weeks ago. (leave)

(d) Do as directed :

(i) The lady _____ we call an angel is really a large-hearted lady. (who or whom)

(ii) They lost _____ of their property. (much or many)

(iii) We shouted many times but there _____ no answer. (was or were)

(iv) Three cars were involved in the accident. (Introductory these)

(v) The thing that killed him was drink. (Anticipatery it)

15

2. Read the passage and answer the questions given at the end :

Games give us not only physical exercise but mental training also. They train both our body and mind. Physically, we become healthy; mentally, we become disciplined. We

become healthy both in our body and mind. A player has to follow the rules of game. In the field, he acts like a disciplined soldier. This sense of discipline becomes a part of his character. He develops respect for laws and rules. Thus games help in making a man a good citizen. 8

(a) What do games give us ?

(b) How does a player get benefited by games ?

(c) To whom is a player compared with ?

(d) What is the part of player's character ?

3. Write a paragraph in about 100 words on any *one* of the following :

(a) Hobbies.

(b) My Favourite Book.

(c) A Visit to Historical Place.

(d) Role of Computers in Life. 5

4. Write a letter to your friend encouraging him to take part in social work.

OR

Write an application to the college principal for merit cum means scholarship. 5

5. Translate the following into English : 7

एक दिन मैं अपने पति और छः वर्षीय पुत्र अगस्त्य के साथ घूमने निकली। सड़क पर तरह-तरह की खाने की चीजें बिक रही थीं। जो चीज़ दिखाई पड़ती, अगस्त्य उसी को खरीदने की जिद करता।

7. निम्नलिखित प्रश्नों का उत्तर दीजिए :

(क) 'बूढ़ी काकी' कहानी में वर्तमान समाज में व्याप्त वृद्धों की समस्या का चित्रण किया गया है।

अथवा

'दोपहर का भोजन' कहानी का संदेश अपने शब्दों में लिखिए।

(ख) 'शिरीष के फूल' निबन्ध की भाषा-शैली का विश्लेषण कीजिए।

अथवा

'निंदा रस' निबन्ध में व्यंग्यात्मकता का सुन्दर विवेचन हुआ है। 8

8. लघूत्तरी प्रश्नों में से **दो** का उत्तर दीजिए :

(क) मोहन राकेश का साहित्यिक परिचय दीजिए।

(ख) मालती जोशी के साहित्यिक सौंदर्य का परिचय दीजिए।

(ग) आचार्य महावीर प्रसाद द्विवेदी की भाषा-शैली का वर्णन कीजिए।

(घ) सरदार पूर्ण सिंह के जीवन का परिचय दीजिए। (2×4=8)

9. अनाधिकार, निरोग–को शुद्ध कीजिए।

आकाश, कामदेव– के पर्याय लिखिए।

आर्द्र, आदर्श–के विलोम लिखिए।

अँगूठा दिखाना, उलटी गंगा बहाना–मुहावरों का अर्थ लिखकर वाक्य में प्रयोग कीजिए।

खाला जी का घर, आए थे हरि भजन को ओटन लगे कपास –लोकोक्तियों का अर्थ लिखकर वाक्य में प्रयोग कीजिए।

(2×5=10)

Roll No. ..... Total Pages : 4

BAE/S-17

03-S

HINDI

Compulsory

Time : Three Hours] [Maximum Marks : 80

1. निम्नलिखित अवतरणों में से **दो** की सप्रसंग व्याख्या कीजिए:

(क) मधुर वचन है औषधी, कटुक वचन है तीर।
स्रवन द्वार ह्वै संचरै, सालै सकल सरीर।।
पाहन पूजै हरि मिलै, तो मैं पुजूँ पहार।
ता यें चाकी भली, पीसि खाय संसार।
मन मथुरा दिल द्वारिका, काया कासी जान।
दस द्वारे का देहरा, ता में जोति पिछान।।

(ख) जाकें बिलोकत लोकप होत, बिसोक लहैं सुरलोग सुठौरहिं।
सो कमला तजि चंचलता करि कोटि कला रिझवै सुरमौरहि।
ताको कहाइ, कहै तुलसी, तू लजाहि न मागत कूकुर-कौरहि।
जानकी जीवन को जनु ह्वै जरि जाउ सो जीह जो जाचत औरहि।

(ग) नीकी दई अनाकनी, फीकी परी गुहारि।
तज्यौ मनौ तारन-बिरदु, बारक बारनु तारि।।
नहिं परागु नहिं मधुर मधु नहिं विकासु इहिं काल।
अली, कली ही सौं बंध्यौ, आगै कौन हवाल।

(घ) माई साँवरे रंग राची।

साज सिंगार बाँध पग घूँघर, लोकलाज तज णाची
गयाँ, कुमत लयाँ साधाँ संगत स्याम प्रीति जग साँची।
गायाँ गायाँ हरि गुण निसदिन, काल ब्याल री बाँची।
स्याम विणा जग खाराँ लागाँ, जगरी बाता काँची।
मीरा सिरि गिरिधर नट नागर भगति रसीली जाँची।

(2×6=12)

2. बिहारी **अथवा** मीराबाई का साहित्यिक सौंदर्य लिखिए। 7

3. कबीर की सामाजिक चेतना पर प्रकाश डालिए। **अथवा** तुलसीदास की भक्ति भावना का उल्लेख कीजिए। 8

4. निम्न प्रश्नों में से **दो** का उत्तर दीजिए :

(क) अमीर खुसरो की हिन्दी कविता सम्बन्धी कृतियों का उल्लेख कीजिए।

(ख) सिद्ध कीजिए कि विद्यापति सौंदर्य के कवि हैं।

(ग) भूषण की राष्ट्रीय भावना का विवेचन कीजिए।

(घ) घनानंद की प्रेमानुभूति का वर्णन कीजिए। (2×4=8)

5. निम्नलिखित गद्यांशों की सप्रसंग व्याख्या कीजिए :

(क) तारक खचित नील अम्बर और नील समुद्र के अवकाश में पवन ऊधम मचा रहा था। अलंकार से मिलकर पवन दुष्ट हो रहा था। समुद्र में आन्दोलन था। नौका लहरों में विकल थी। स्त्री सतर्कता से लुढ़कने लगी। एक मतवाले नाविक के शरीर से टकराती हुई सावधानी से उसका कृपाण निकालकर, फिर लुढ़कते हुये, बन्दी के समीप पहुंच गई।

अथवा

उसे लगा था कि दुनिया में हर आदमी के दो शहर होते हैं। एक वह जहां वह पैदा होता है और उसका कोई रहता है और दूसरा वह, जहाँ वह अपनी रोजी के लिए जाता है और जिन्दगी गवाँ देता है। तीसरा शहर तो अपना नहीं होता और बार-बार उसे अपने शहर का ख्याल आता है, जिसमें वह खुद रहता है और नौकरी करता है और जो अब तक पराया है फिर भी उसे उस शहर का ख्याल आता है जिसमें उसका बाप रहता है और जो अपने बाप के लिए पराया हो गया है।

(ख) किन्तु इस संसार के आरम्भ में बड़ा भारी पार्थक्य होने पर भी अन्त में बड़ी भारी एकता है। समय अन्त में सबको एक मार्ग पर ले आता है। देशपति राजा और भिक्षा माँगकर पेट भरने वाले कंगाल का परिणाम एक ही होता है। मट्टी-मट्टी में मिल जाता है और यह जीते ही लुभाने वाली दुनिया यहीं रह जाती है? कितने ही शासक और कितने ही नरेश इस पृथ्वी पर हो गये, आज उनका कहीं पता निशान नहीं है। थोड़े-थोड़े दिन अपनी नौबत बजा गये, चले गये।

अथवा

निंदा का उद्गम ही हीनता और कमजोरी से होता है। मनुष्य अपनी हीनता से दबता है। वह दूसरों की निन्दा करके ऐसा अनुभव करता है कि वे निकृष्ट हैं और वह उनसे अच्छा है। उसके अहं की इससे तुष्टि होती है। (2×6=12)

6. यशपाल अथवा हजारी प्रसाद द्विवेदी का साहित्यिक सौंदर्य लिखिए। 7

(ल) वह पैर से लंगड़ा है।

(व) राम कलम से लिखता है।

(श) मुझे फल अच्छे लगते हैं।

(स) शोर मत करो।

(ह) आपका नाम क्या है?

(त) वह विद्यालय जाता है। (8×1=8)

Roll No. ..... Total Pages : 4

05-S

BAE/S-17

SANSKRIT (Compulsory)
Paper–(C)

Time : Three Hours] [Maximum Marks : 80

नोट : सभी प्रश्न अनिवार्य हैं।

1. निम्नलिखित सभी प्रश्नों के उत्तर दीजिए :

(क) 'नीतिशतकम्' के लेखक का नाम लिखिए।

(ख) 'धिक् दारिद्रयम्' पाठ किस मूल ग्रन्थ से उद्धृत है?

(ग) 'पञ्चतन्त्र' के रचयिता कौन हैं?

(घ) 'सद्वृत्तम्' पाठ के लेखक का नाम लिखिए।

(ङ) 'फलानाम्' पद में कौन-सी विभक्ति तथा वचन प्रयुक्त हुए हैं?

(च) 'वदामि' पद धातु के किस पुरुष और वचन का रूप है?

(छ) सन्धि के मुख्य रूप से कितने भेद हैं?

(ज) 'स ब्राह्मणं धनं ददाति' को शुद्ध करके लिखिए।

(8×2=16)

2. (क) किन्हीं **दो** श्लोकों का सरलार्थ कीजिए :

(अ) बलमसि बलं मयि धेहि आजोऽस्योजो मयि धेहि।
मन्युरसि मन्युं मयि धेहि सहोऽसि सहोमयि धेहि।।

(ब) अर्थेन हि विहिनस्य पुरुषस्याल्पमेधसः।
विच्छिद्यन्ते क्रियाः सर्वाः ग्रीष्मे कुसरितो यथा।।

(स) मरणान्तानि वैराणि निवृत्तं नः प्रयोजनम्।
क्रियतामस्य संस्कारो ममाप्येष यथा तव।।

(द) दानं भोगो नाशस्तिस्तो गतयो भवन्ति वित्तस्य।
यो न ददाति न भुङ्क्ते तस्य तृतीया गतिर्भवति।।

(2×5=10)

(ख) 'साधुव्रतं चरः' **अथवा** 'धर्मज्ञो रामः' पाठ का सार लिखिए। (1×6=6)

3. (क) निम्नलिखित में से किन्हीं **दो** का सरलार्थ कीजिए :

(अ) यान्यनवद्यानि कर्माणि तानि सेवितव्यानि, नो इतराणि। यान्यस्माकं सुचरितानि तानि त्वयोपास्यानि, नो इतराणि। ये चास्मच्छ्रेयांसो ब्राह्मणाः तेषां वयाऽऽसनेनप्रश्वसितव्यम्।

(ब) रे शशकाधम, एकमस्तावत्त्वं लघुः प्राप्तोऽपरतो वेलातिक्रमेण। तदस्मादपराधात्त्वां निपात्य प्रातः सकलान्यपि मृगकुलान्युच्छेदयिष्यामि। अथ शशकः सविनयं प्रोवाच– स्वामिन, नापराधो मम, न च सत्त्वानाम् तच्छूयताम् कारणम्।

(स) न स्थातव्यं न गन्तव्यं दुर्जनेन समं क्वचित्।
काकसङ्गाद्धतो हंसतिष्ठन् गच्छंश्च वर्त्तकः।।

(2×5=10)

(ख) 'नीलवर्ण शृगालः' **अथवा** 'पराधिकार चर्चापरिवर्जयेत' पाठ का सार लिखिए। (1×6=6)

4. (क) किन्हीं **दो** के यथानिर्दिष्ट रूप लिखिए :

बालक (द्वितीया, तृतीया, चतुर्थी विभक्ति)
लता (प्रथमा, पञ्चमी, षष्ठी विभक्ति)
फल (पञ्चमी, षष्ठी, सप्तमी विभक्ति)
अस्मद् (प्रथमा, द्वितीया, तृतीया विभक्ति)। (2×4=8)

(ख) किन्हीं **दो** धातु के यथानिर्दिष्ट लकारों में रूप लिखिए :

√भू - लृट, लोट्, लकार
√पठ् - लोट्, लङ् लकार
√कृ - विधिलिङ्, लट् लकार
√गम् - लृट्, लट् लकार। (2×4=8)

5. (क) निम्नलिखित में से **चार** का सन्धि **अथवा** सन्धि-विच्छेद कीजिए :

गण + ईशः, विद्या + आलयः, यदि + अपि, जगत् + ईशः।
प्रेजते, उपेन्द्रः, तथैव, श्रीशः। (4×2=8)

(ख) किन्हीं **आठ** वाक्यों का संस्कृत में अनुवाद कीजिए :

(अ) गुरु को नमस्कार !
(ब) कुत्ता शेर से डरता है।
(स) वह निर्धन को वस्त्र देता है।
(द) गाँव के चारों ओर वृक्ष हैं।
(य) पिता के साथ पुत्र जाता है।
(र) वृक्ष से पत्ते गिरते हैं।

Roll No. .....

Total Pages : 3

BAE/S-17

06-S

SANSKRIT (Elective)

Time : Three Hours]

[Maximum Marks : 80

नोट : सभी प्रश्न अनिवार्य हैं।

1. निम्नलिखित प्रश्नों के संक्षिप्त उत्तर दीजिए :

   (क) श्रीमद्भगवद्गीता के द्वितीय अध्याय में कुल कितने श्लोक हैं?

   (ख) हितोपदेश किसकी रचना है?

   (ग) भर्तृहरि ने कितने शतकों की रचना की?

   (घ) 'सत्संगतिः कथय किं न .....' को पूरा कीजिए।

   (ङ) 'पितृ' शब्द के तृतीया विभक्ति में रूप लिखिए।

   (च) 'भू' धातु के लट् लकार, प्रथम पुरुष के रूप लिखिए।

   (छ) 'अच्' सन्धि का दूसरा नाम क्या है?

   (ज) 'वंशस्थ' के एक चरण में कितने वर्ण होते हैं?

   (8×2=16)

2. (क) निम्नलिखित में से किन्हीं **दो** श्लोकों का सरलार्थ कीजिए :

   (अ) वेदाविनाशिनं नित्यं य एनमजमव्ययम्।
   कथं स पुरुषः पार्थ कं घातयति हन्ति कम्।।

(ब) हतो वा प्राप्स्यसि स्वर्गं जित्वा वा भोक्ष्यसे महीम्।
तस्मादुत्तिष्ठ कौन्तेय युद्धाय कृतनिश्चयः।।

(स) तानि सर्वाणि संयम्य युक्त आसीत् मत्परः।
वशे हि यस्येन्द्रियाणि तस्य प्रज्ञा प्रतिष्ठिता।। (2×4=8)

(ख) निम्नलिखित में से किन्हीं **दो** की व्याख्या कीजिए :

(अ) उद्यमेन हि सिध्यन्ति कार्याणि न मनोरथैः।
न हि सुप्तस्य सिंहस्य प्रविशन्ति मुखे मृगाः।।

(ब) मातृवत् परदारेषु परद्रव्येषु लोष्टवत्।
आत्मवत् सर्वभूतेषु यः पश्यति सा पण्डितः।।

(स) अयं निजः परो वेति गणना लघुचेतसाम्।
उदारचरितानां तु वसुधैव कुटुम्बकम्।। (2×4=8)

3. (क) निम्नलिखित में से किन्हीं **दो** श्लोकों का सरलार्थ कीजिए :

(अ) वरं पर्वतदुर्गेषु भ्रान्तं वनचरैः सह।
न मूर्खजनसम्पर्कः सुरेन्द्रभवनेष्वपि।।

(ब) दानं भोगो नाशस्तिस्रो गतयो भवन्ति वित्तस्य।
यो न ददाति न भुङ्क्ते तस्य तृतीया गतिर्भवति।।

(स) भवन्ति नम्रास्तरवः फलोद्गमैः नवाम्बुभिर्दूरविलम्बिनो घनाः।
अनुद्धताः सत्पुरुषा समृद्धिभिः स्वभाव एवैष परोपकारिणाम्।।
(2×5=10)

(ख) निम्नलिखित में से किसी **एक** सूक्ति की व्याख्या कीजिए :

(अ) नानाफलैः फलति कल्पलतेव भूमिः।

(ब) सेवाधर्मः परमगहनो योगिनामप्यगम्यः। 6

4. (क) निम्नलिखित किन्हीं **चार** के यथानिर्दिष्ट रूप लिखिए :

राम (तृतीया, पंचमी), भानु (द्वितीया, चतुर्थी), लता (चतुर्थी, षष्ठी), मातृ (पंचमी, सप्तमी), अस्मद् (तृतीया, षष्ठी), तद्-स्त्रीलिंग (प्रथमा, तृतीया)। (4×2=8)

(ख) निम्नलिखित **दो** धातुओं के यथानिर्दिष्ट लकारों में रूप लिखिए :

भू (लोट् लकार), अस् (लङ् लकार), नृत् (लट् लकार), याच् (विधिलिङ् लकार)। (2×4=8)

5. (क) निम्नलिखित में से किन्हीं **आठ** में सन्धि कीजिए :

यदि + अपि, भू + आदि, देव + आलयः, मुनि + इन्द्रः तथा + अपि, गै + अकः, वने + अपि, प्र + एजते, सत् + चरित्रम्, तत् + टीका, निः + बलः, मनः + रथः।
(8×1=8)

(ख) निम्नलिखित में से किन्हीं **दो** छन्दों को लक्षण एवं उदाहरण सहित स्पष्ट कीजिए :

अनुष्टुप्, वंशस्थ, वसन्ततिलका, उपेन्द्रवज्रा। (2×4=8)

Roll No. .....

Total Pages : 7

BAE/S-17

08-S

HISTORY OF HARYANA

(From Harappan Age to 1966 A.D.)

Opt. (ii)

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Attempt *four* more questions, selecting *one* question from each unit. All questions carry equal marks. The part relating to the explanatory note on map will carry full marks for visually handicapped candidates.

नोट : कुल **पाँच** प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 अनिवार्य है। शेष **चार** प्रश्नों के उत्तर प्रत्येक इकाई में से **एक** प्रश्न चुनते हुए दीजिए। सभी प्रश्नों के अंक समान हैं नेत्रहीन विद्यार्थियों के लिए मानचित्र सम्बन्धी टिप्पणी वाले भाग के पूरे अंक होंगे।

Compulsory Question (अनिवार्य प्रश्न)

1. Choose the correct answer for the multiple choice questions. Each question carries 2 marks. (8×2=16)

बहुविकल्पीय प्रश्नों के लिए सही उत्तर चुनिए। प्रत्येक प्रश्न 2 अंक का है।

(a) Who wrote 'Ain-a-Akbari' ?

(i) Faizi

(ii) Akbar

(iii) Jahangir

(iv) Abul Fazl.

'आईने अकबरी' की रचना किसने की थी?

(i) फैजी ने

(ii) अकबर ने

(iii) जहाँगीर ने

(iv) अबुल फजल ने।

(b) Total number of Puranas is

(i) 4

(ii) 12

(iii) 18

(iv) 22.

पुराणों की कुल संख्या है

(i) 4

(ii) 12

(iii) 18

(iv) 22.

(c) Who wrote 'Harsha Charita' ?

(i) Kumargupta

(ii) Banabhatta

(iii) Bhandi

(iv) Kantak.

'हर्षचरित' के लेखक कौन हैं?

(i) कुमारगुप्त

(ii) बाणभट्ट

(iii) भण्डी

(iv) कन्तक।

(d) When Mohammad Ghori died ?

(i) In 1206

(ii) In 1210

(iii) In 1526

(iv) In 1556.

मुहम्मद गौरी की मृत्यु कब हुई थी?

(i) 1206 में

(ii) 1210 में

(iii) 1526 में

(iv) 1556 में।

(e) Second Battle of Panipat was held in

(i) 1526

(ii) 1556

(iii) 1568

(iv) 1761.

पानीपत का दूसरा युद्ध हुआ था

(i) 1526 में

(ii) 1556 में

(iii) 1568 में

(iv) 1761 में।

(f) George Thomas hailed from

(i) Ireland

(ii) England

(iii) Scotland

(iv) Hansi.

जॉर्ज टॉमस मूलत: कहाँ से सम्बन्धित थे?

(i) आयरलैण्ड

(ii) इंग्लैण्ड

(iii) स्कॉटलैण्ड

(iv) हांसी।

(g) The Revolt of 1857 in Haryana started from

(i) Panipat

(ii) Ambala

(iii) Rewari

(iv) Karnal.

हरियाणा में 1857 की क्रान्ति आरम्भ हुई थी

(i) पानीपत से

(ii) अम्बाला से

(iii) रिवाड़ी से

(iv) करनाल से।

(h) Where Mahatma Gandhi was arrested in Haryana in 1919?

(i) Rohtak.

(ii) Hansi

(iii) Karnal

(iv) Palwala.

1919 में हरियाणा में महात्मा गाँधी कहाँ गिरफ्तार किये गये थे?

(i) रोहतक में

(ii) हांसी में

(iii) करनाल में

(iv) पलवल में।

UNIT–I (इकाई–I)

2. Analyse the main features of the Harappan civilization in Haryana.

हरियाणा में हड़प्पा सभ्यता की प्रमुख विशेषताओं का विश्लेषण कीजिए। 16

3. Who were Yaudheyas ? Discuss their political setup in Haryana.

यौधेय कौन थे? हरियाणा में उनके प्रशासनिक ढांचे का वर्णन कीजिए। 16

UNIT–II (इकाई–II)

4. Describe the invasions of Mohammad Ghori. What were the effects of his invasions on Haryana ?

   मुहम्मद गौरी के आक्रमणों का विवरण दीजिए। उसके आक्रमणों के हरियाणा पर क्या प्रभाव पड़े? 16

5. Discuss the social and economic condition of Haryana under the Mughal period.

   मुगलकालीन हरियाणा की सामाजिक व आर्थिक दशा का वर्णन कीजिए। 16

UNIT–II (इकाई–II)

6. Describe the spread and impact of Arya Samaj in Haryana.

   हरियाणा में आर्य समाज के विस्तार तथा प्रभाव का वर्णन कीजिए। 16

7. What role was played by the people of Haryana in Non-Cooperation Movement ?

   असहयोग आन्दोलन में हरियाणा के लोगों ने क्या भूमिका निभाई थी? 16

UNIT–IV (इकाई–IV)

8. On the outline map of Haryana, show the important Urban centres during the Mughal Period. Also write an explanatory note.

   हरियाणा के रेखा-मानचित्र पर मुगलकाल के प्रमुख शहरी केन्द्रों को दर्शाइए। एक व्याख्यात्मक टिप्पणी भी लिखिए।

9. On the outline map of Haryana, show the major centres of the Uprising of 1857 in Haryana. Also write an explanatory note.

   हरियाणा के रेखा-मानचित्र पर, हरियाणा में 1857 की क्रान्ति के प्रमुख स्थान दर्शाइए। एक व्याख्यात्मक टिप्पणी भी लिखिए।

Roll No. ..... Total Pages : 7

BAE/S-17 **09-S**

POL2ITICAL SCIENCE

(Political Theory Concepts)

Paper–II

Opt. : (ii)

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions, selecting at least *one* question from each part.

नोट : प्रत्येक भाग से कम से कम **एक** प्रश्न का चयन करते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए।

PART–A (भाग-अ)

1. What is 'Political Theory' ? Discuss its significance and utility.

राजनीतिक सिद्धान्त किसे कहते हैं? इसकी महत्ता और उपयोगिता का उल्लेख करें। 16

2. Define Authority. Discuss its different kinds.

सत्ता की परिभाषा बताइए। इसकी भिन्न-भिन्न किस्मों की व्याख्या करें। 16

3. Write a note on Legitimacy.

वैधता पर एक नोट लिखो। 16

4. Define Political Culture. Discuss its kinds.

राजनीतिक संस्कृति की परिभाषा दीजिए। इसके प्रकारों की व्याख्या करें। 16

PART-B (भाग-ब)

5. Write notes on the following :

(a) Political Participation.

(b) Political Modernisation.

निम्नलिखित पर नोट लिखिए :

(क) राजनीतिक सहभागिता।

(ख) राजनीतिक आधुनिकीकरण। (8×2=16)

6. What is meant by Political Development ? Discuss its different aspects.

राजनीतिक विकास का क्या अर्थ है? इसके विभिन्न पक्षों की व्याख्या करें। 16

7. What is meant by National Integration ? Discuss the steps taken for National Integration in India.

राष्ट्रीय एकीकरण का क्या अर्थ है? उन तत्वों की व्याख्या करें जो भारत में राष्ट्रीय एकीकरण के लिए उठाए गये हैं। 16

8. Write notes on the following :

(a) Meaning of Consumer Protection.

(b) Rights of Consumers.

निम्नलिखित पर नोट लिखिए :

(क) उपभोक्ता संरक्षण का अर्थ।

(ख) उपभोक्ता के अधिकार। (8×2=16)

PART-C (भाग-स)

9. Short answer type questions. Attempt any *four*.

(a) Concept of Power.

(b) Difference between Power and Authority.

(c) Types of Political Participation.

(d) Nation Building.

(e) Political Socialization.

(f) Problems of Consumers. (4×4=16)

लघुउत्तरीय प्रश्न। किन्हीं **चार** के उत्तर दीजिए।

(क) शक्ति की अवधारणा।

(ख) शक्ति व सत्ता में अन्तर।

(ग) राजनीतिक सहभागिता के प्रकार।

(घ) राष्ट्र-निर्माण।

(ङ) राजनीतिक समाजीकरण।

(च) उपभोक्ताओं की समस्याएं।

10. Objective type questions.

वस्तुनिष्ठ प्रश्न।

(a) Who introduced the four elements of Political Theory ?

(i) Aristotle

(ii) Laswell

(iii) Plato

(iv) Fredrick Polak.

राजनीतिक सिद्धान्त के चार तत्व किसने प्रस्तुत किए थे ?

(i) अरस्तू

(ii) लॉसवैल

(iii) प्लेटो

(iv) फैड्रिक पोलक।

(b) Which of the following is the element of Power ?

(i) Poverty

(ii) Unemloyment

(iii) Knowledge

(iv) Illiteracy.

निम्न में से कौन-सा तत्व शक्ति का स्रोत है?

(i) गरीबी

(ii) बेकारी

(iii) ज्ञान

(iv) निरक्षरता।

(c) Power and Authority

(i) oppose each other

(ii) are two separate concepts

(iii) are the different names of one concept

(iv) No relation between the two.

शक्ति और सत्ता

(i) परस्पर विरोधी हैं

(ii) दो पृथक धारणाएं हैं

(iii) एक ही धारणा के दो नाम हैं

(iv) दोनों में कोई सम्बन्ध नहीं है।

(d) Who wrote 'The Managerial Revolution'?

(i) Mosca

(ii) Pareto

(iii) David Easton

(iv) Laswell.

'The Managerial Revolution' पुस्तक के लेखक हैं

(i) मोस्का।

(ii) पैरेटो

(iii) डेविड ईस्टन

(iv) लॉसवैल।

(e) Main defect of Bureaucracy is

(i) Formality

(ii) Red Tapism

(iii) Passion for Power

(iv) All the above.

अफसरशाही का प्रमुख अवगुण है

(i) औपचारिकता

(ii) लाल फीताशाही

(iii) शक्ति आवेग

(iv) उपरोक्त सभी।

(f) In which year 'Political Culture' word was introduced ?

(i) In 1926

(ii) In 1943

(iii) In 1956

(iv) In 1971.

'राजनीतिक संस्कृति' शब्द का प्रयोग सर्वपृथम कब किया गया था?

(i) 1926 में

(ii) 1943 में

(iii) 1956 में

(iv) 1971 में।

(g) 'Nation' orginated from 'Natio'. From which language it is derived from ?

(i) English

(ii) Latin

(iii) French

(iv) Italian.

'राष्ट्र' शब्द की उत्पत्ति 'नेशियो' शब्द से हुई है।, यह किस भाषा से लिया गया है?

(i) अंग्रेजी

(ii) लेटिन

(iii) फ्रैंच

(iv) इटैलियन।

(h) 'National Integration Council' was re-established in

(i) 1977

(ii) 1978

(iii) 1980

(iv) 1968.

राष्ट्रीय एकीकरण परिषद् की पुनः स्थापना की गई थी

(i) 1977 में

(ii) 1978 में

(iii) 1980 में

(iv) 1968 में।

Roll No. .....

Total Pages : 3

BAE/S-17

10-S

SOCIOLOGY

(Introduction to Sociology)

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *four* questions by selecting *one* question from Unit-I to Unit-IV. Q. No. 9 (Unit-V) is compulsory. All questions carry equal marks.

नोट : इकाई–I से इकाई–IV प्रत्येक से **एक-एक** प्रश्न चुनते हुए **चार** प्रश्नों के उत्तर दीजिए। प्रश्न सं. 9 (इकाई–V) अनिवार्य है। सभी प्रश्नों के अंक समान हैं।

UNIT–I (इकाई–I)

1. Define the term Sociology. Explain its significance and scope. 16

समाजशास्त्र की परिभाषा दीजिए। इसके महत्व व विस्तार क्षेत्र का वर्णन कीजिए।

OR (अथवा)

2. Discuss the relationship of Sociology with Economics and Political Science. 16

समाजशास्त्र के अर्थशास्त्र एवं राजनीति विज्ञान के साथ संबंध की चर्चा कीजिए।

UNIT–II (इकाई–II)

3. What do you understand by Primary-groups ? Also explain the merits and demerits of primary groups. 16

प्राथमिक समूह से आप क्या समझते हैं? प्राथमिक समूहों के गुणों-अवगुणों की भी चर्चा कीजिए।

OR (अथवा)

4. Define Social structure. Discuss the elements of social structure. 16

सामाजिक संरचना की परिभाषा दीजिए। सामाजिक संरचना के तत्वों की चर्चा कीजिए।

UNIT–III (इकाई–III)

5. Define Marriage and also explain the various types of marriages. 16

विवाह की परिभाषा दीजिए और विवाह के विभिन्न प्रकारों की चर्चा कीजिए।

OR (अथवा)

6. What do you understand by Kinship ? What is the role being played by the Kinship in society ? 16

नातेदारी से आप क्या समझते हैं? समाज में नातेदारी द्वारा कौन-सी भूमिका निभाई जा रही है?

UNIT–IV (इकाई–IV)

7. Define the term Social Process and also explain about the nature and significance of co-operation in society. 16

सामाजिक प्रक्रिया की परिभाषा दीजिए और सहयोग की प्रकृति और महत्त्व की भी चर्चा कीजिए।

OR (अथवा)

8. What is Social Change ? What are the various factors responsible for social change in India ? 16

सामाजिक परिवर्तन क्या है? भारत में सामाजिक परिवर्तन के उत्तरदाई विभिन्न कारक कौन-कौन से हैं?

UNIT–V (इकाई–V)

Compulsory Question (अनिवार्य प्रश्न)

9. Write short notes on the following :
   (a) Types of Family.
   (b) Nuclear Family System.
   (c) Concept of Competition.
   (d) Social Mobility. (4×4=16)

निम्न पर संक्षिप्त टिप्पणी लिखें :

(क) परिवार के प्रकार।

(ख) एकल परिवार प्रणाली।

(ग) स्पर्धा की अवधारणा।

(घ) सामाजिक गतिशीलता।

5. Give the properties of Monopoly, and give equilibrium of the firm under Price discrimination. 16

एकाधिकार की विशेषताएं बताएं, एवं कीमत विभेद के अंतर्गत फर्म के संतुलन का वर्णन करें।

UNIT–III (इकाई–III)

6. Give the main features of Indian economy. 16

भारतीय अर्थव्यवस्था की मुख्य विशेषताओं का वर्णन करें।

7. Discuss the main economic reforms taken up in Indian economy. 16

भारतीय अर्थव्यवस्था में किए गए मुख्य आर्थिक सुधारों का वर्णन करें।

UNIT–IV (इकाई–IV)

8. Discuss the trends in Indian agriculture and productivity since the times of Green revolution. 16

हरित क्रान्ति के समय से भारतीय कृषि और उत्पादकता की प्रवृत्तियों का वर्णन करें।

9. Discuss the importance of Small scale industries in India and their problems. 16

भारत में लघु पैमाने के उद्योगों के महत्त्व तथा इनकी समस्याओं का वर्णन करें।

Roll No. ..... Total Pages : 4

BAE/S-17

12-S

ECONOMICS

(Micro Economics)

Paper–I

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question from each unit, All questions carry equal marks.

नोट : कुल **पाँच** प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 अनिवार्य है। प्रत्येक इकाई से **एक** प्रश्न का चयन कीजिए। सभी प्रश्नों के अंक समान हैं।

Compulsory Question (अनिवार्य प्रश्न)

1. (a) Choose the correct option :
   (i) The wealth definition was given by (Marshall/ Smith).
   (ii) Economic problem arises due to (scarcity/ abundance).
   (iii) In case of Zero elastic demand, quantity demanded will be (constant/increasing).
   (iv) Marginal utility (can be/cannot be) negative.
   (v) Average revenue curve under perfect competition is (horizontal/45 degree line).
   (vi) Economic reforms in India started in (1971/1991).
   (vii) Indian economy is a (centralised/decentralised) economy.

(viii) 12th Five-year plan has the period of (2007-12/2012-17).

(ix) Profit-oriented agriculture is (commercial/subsistence).

(x) Bank to meet the financial needs of small industries is (NABARD/SIDBI). (10×1=10)

सही विकल्प का चुनाव कीजिए :

(i) धन संबंधी परिभाषा दी गई थी (मार्शल/स्मिथ) द्वारा।

(ii) आर्थिक समस्या उत्पन्न होने का कारण है (दुर्लभता/प्रचुरता)।

(iii) शून्य मांग लोच की स्थिति में मांग मात्रा रहेगी (स्थिर/वर्द्धमान)।

(iv) सीमान्त तुष्टिगुण ऋणात्मक (हो सकता/नहीं हो सकता है)।

(v) पूर्ण प्रतियोगिता के अंतर्गत, औसत आगम रेखा रहती है (क्षैतिज, 45 डिग्री)।

(vi) भारत में आर्थिक सुधार (1971/1991 में) शुरू हुए थे।

(vii) भारतीय अर्थव्यवस्था एक (केन्द्रीयकृत/विकेन्द्रीयकृत) अर्थव्यवस्था है।

(viii) बारहवीं पंचवर्षीय योजना की अवधि है (2007-12/2012-17)।

(ix) लाभ उन्मुख कृषि को कहा जाता है (व्यापारिक/जीवन निर्वाह खेती)।

(x) लघु उद्योगों की वित्तीय आवश्यकताओं को पूरा करने वाला बैंक है (नाबार्ड/सिडबी)।

(b) Attempt any *four* of the following :

(i) Give the meaning of Opportunity cost.

(ii) Give the meaning of an Indifference curve.

(iii) Give the meaning of Selling costs.

(iv) Give the meaning of Disguised unemployment.

(v) Give the meaning of Marketable surplus. (1½×4=6)

निम्न में से किन्हीं **चार** के उत्तर दीजिए :

(i) अवसर लागत का अर्थ बताएं।

(ii) तटस्थता वक्र का अर्थ बताएं।

(iii) विक्रय लागतों का अर्थ बताएं।

(iv) छिपी बेरोज़गारी का अर्थ बताएं।

(v) विपणन योग्य अतिरेक का अर्थ बताएं।

UNIT–I (इकाई–I)

2. Define Economics, and give its nature and scope. 16

अर्थशास्त्र की परिभाषा दें एवं इसकी प्रकृति और क्षेत्र का वर्णन करें।

3. State and explain the Law of Variable proportions. 16

परिवर्तनशील अनुपातों के नियम का वर्णन करें।

UNIT–II (इकाई–II)

4. Give the properties of Perfect competition and long run equilibrium of firm and industry under returns to scale ? 16

पूर्ण प्रतियोगिता की विशेषताएं बताएं, तथा दीर्घकाल में पैमाने के प्रतिफल के अंतर्गत फर्म तथा उद्योग के संतुलन का वर्णन करें।

(b) If α and β be the imaginary cube roots of unity, prove that

$$\alpha e^{\alpha x} + \beta e^{\beta x} = -e^{-x/2}\left[\sqrt{3}\sin\frac{\sqrt{3}}{2}x + \cos\frac{\sqrt{3}}{2}x\right].$$

2½

10. (a) Prove that $\tan\left(i\log\frac{a-ib}{a+ib}\right) = \frac{2ab}{a^2-b^2}$. 3

(b) Sum the series

$$\tan^{-1}\frac{1}{3} + \tan^{-1}\frac{1}{7} + \tan^{-1}\frac{1}{13} + \ldots\ldots \text{ to } n \text{ terms}$$

and deduce the sum to infinity. 2½

Roll No. ..... Total Pages : 4

BAE/S-17 **15-S**

MATHEMATICS

(Algebra and Trigonometry)

Paper : BM-101

Time : Three Hours] [Maximum Marks : 27

Note : Attempt *five* questions in all, selecting at least *one* question from each section.

SECTION–I

1. (a) Show that every square matrix is uniquely expressible as the sum of a Hermitian and a skew Hermitian matrix. 3

(b) Find the non-singular matrices P and Q such that PAQ is in normal form, where $A = \begin{bmatrix} 2 & 2 & -6 \\ -1 & 2 & 2 \end{bmatrix}$. 2½

2. (a) Verify Cayley-Hamilton theorem for the matrix A and compute A^{-1}, where $A = \begin{bmatrix} 0 & 0 & 1 \\ 3 & 1 & 0 \\ -2 & 1 & 4 \end{bmatrix}$. 3

(b) Check whether the following system of equations is consistent or not. Solve if it is consistent.

$$4x + 3y + 2z = -7$$

$$2x + y - 4z = -1$$

$$x + 2y + z = 1.$$ 2½

3. (a) Verify that the matrix A is proper orthogonal matrix

where $A = \begin{bmatrix} \frac{12}{13} & \frac{5}{13} \\ \frac{-5}{13} & \frac{12}{13} \end{bmatrix}$. 2½

(b) Diagnolize the quadratic form

$$x_1^2 + 2x_2^2 - 7x_3^2 - 4x_1x_2 + 8x_1x_3.$$

Also find the rank, index, signature and equation of transformation. 3

SECTION–II

4. (a) Solve the equation

$$\frac{A^2}{x-a} + \frac{B^2}{x-b} + \frac{C^2}{x-c} + \ldots\ldots + \frac{H^2}{x-h} = k$$

has all real roots. 3

(b) Find the common roots of the equations

$$x^4 + 3x^3 - 5x^2 - 6x - 8 = 0$$

and $x^4 + x^3 - 9x^2 + 10x - 8 = 0$.

Hence solve them completely. 2½

5. (a) If α, β, γ are the roots of the equation

$$x^3 + x^2 + 2x + 3 = 0,$$

form an equation whose roots are $\beta + \gamma - \alpha$, $\gamma + \alpha - \beta$, $\alpha + \beta - \gamma$. 3

(b) Solve the equation

$$40x^4 + 42x^3 + 3x^2 - 1 = 0$$

by Descarte's method. 2½

SECTION–III

6. (a) Find the remainder in the division of 2^{20} by 7. 2½

(b) Find all the solutions in positive integers of

$$5x + 3y = 52.$$ 3

7. (a) If p is a prime number and a denotes an integer such that $(a, p) = 1$, then $a^{p-1} \equiv 1 \pmod{p}$. 3

(b) Show that $n^{16} - a^{16}$ is divisible by 85 if n and a are co-prime to 85. 2½

8. (a) Find the highest power of 9 which divides 365!. 3

(b) If n is a power of z, then prove that $\sigma(n)$ is odd. 2½

SECTION–IV

9. (a) If α, β be the roots of $x^2 - 2x + 4 = 0$, prove that

$$\alpha^n + \beta^n = 2^{n+1} \cos\frac{n\pi}{3}.$$ 3

Roll No. .....

Total Pages : 3

16-S

BAE/S-17

MATHEMATICS

(Calculus)

Paper : BM-102

Time : Three Hours]

[Maximum Marks : 26

Note : Attempt *five* questions in all, selecting at least *one* question from each section.

SECTION–I

1. (a) Test for continuity of the function

$$f(x) = \begin{cases} (x-a)\sin\dfrac{1}{x-a}, & \text{when } x \neq a \\ 0, & \text{when } x = a. \end{cases} \qquad (2\frac{1}{2})$$

(b) If $x = \sin\left(\dfrac{\log y}{a}\right)$, prove that

$$(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - (n^2+a^2)y_n = 0. \qquad (2\frac{1}{2})$$

2. (a) Show that

$$\log\,(x+h) = \log x + \frac{h}{x} - \frac{h^2}{2x^2} + \cdots\cdots\cdots + \frac{(-1)^{n-1}\,h^n}{n\,(x+\theta h)^n}.$$

$(2\frac{1}{2})$

(b) Find the asymptote of the curve

$$r = \frac{2a}{1+2\cos\theta}. \qquad (2\frac{1}{2})$$

3. (a) Find ρ, the radius of curvature for the curve $x = a\cos^3\theta$, $y = a\sin^3\theta$. (2½)

(b) Trace the curve $x^2y^2 = a^2(y^2 - x^2)$. (2½)

SECTION–III

4. (a) Obtain a reduction formula for $\int e^{ax}\cos^n x\,dx$. (2½)

(b) Find the perimeter of the circle $r = a\cos\theta$. (2½)

5. (a) Find the intrinsic equation of the curve $p = r\sin\alpha$. (2½)

(b) Find the area of the loop of the curve $a^3y^2 = x^4(b + x)$. (2½)

6. (a) Find the volume of the solid obtained by revolving $x = a\cos\theta$, $y = b\sin\theta$ about the y-axis. (2½)

(b) Find the area of the surface formed by the revolution of $y^2 = 4ax$ about y-axis by the arc from the vertex to $x = \frac{a}{4}$. (2½)

SECTION–III

7. (a) Solve the differential equation

$$(y^2 + 2x^2y)\,dx + (2x^3 - xy)\,dy = 0. \quad (2½)$$

(b) Solve the differential equation

$$(px - y)(py + x) = a^2p. \quad (2½)$$

8. (a) Solve $(D^4 - a^4)\,y = x^4 + \sin bx$. (2½)

(b) Solve $x\frac{d^3y}{dx^3} + \frac{d^2y}{dx^2} = \frac{1}{x}$. (2½)

SECTION–IV

9. (a) Solve the differential equation

$$x\frac{d^2y}{dx^2} + (4x^2 - 1)\frac{dy}{dx} + 4x^3y = 2x^3. \quad 3$$

(b) Solve the differential equation by the method of variation of parameters : $\frac{d^2y}{dx^2} + y = \operatorname{cosec} x$. 3

10. (a) Solve the simultaneous equations :

$$\frac{dx}{dt} = 3x + 2y.$$

$$\frac{dy}{dt} = 5x + 3y. \quad 3$$

(b) Solve the simultaneous equations :

$$\frac{dx}{x(y^2 - z^2)} = \frac{dy}{y(z^2 - x^2)} = \frac{dz}{z(x^2 - y^2)}. \quad 3$$

10. Reduce $2x^2 + 2y^2 + z^2 + 2yz - 2zx - 4xy + x + y = 0$ to standard form and find the coordinates of the vertex and equation to its axis. 5.5

Roll No. ..... Total Pages : 4

BAE/S-17 **17-S**

MATHEMATICS

(Vector Analysis and Geometry)

Paper : BM-103

Time : Three Hours] [Maximum Marks : 27

Note : Attempt *five* questions in all, selecting at least *one* question from each section.

SECTION–I

1. (a) For any three vectors $\vec{a}$, $\vec{b}$ and $\vec{c}$ show that $(\vec{b}\times\vec{c})\times(\vec{c}\times\vec{a})=[\vec{a}\,\vec{b}\,\vec{c}]\vec{c}$ and hence deduce that

$$[\vec{b}\times\vec{c}\quad\vec{c}\times\vec{a}\quad\vec{a}\times\vec{b}]=[\vec{a}\;\vec{b}\;\vec{c}]^2$$ 2.5

(b) Find an equation for the tangent plane to the surface $2x\,z^2 - 3xy - 4x = 7$ at the point $(1, -1, 2)$ 2.5

2. (a) Find curl $(f(r)\vec{r})$ where $f(r)$ is differentiable and $r = |\vec{r}|$. 2.5

(b) Find $f(r)$ such that $\nabla^2 f(r) = 0$, where $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$ and $r = |\vec{r}|$. 2.5

SECTION–II

3. (a) If $\vec{f} = (3x^2 + 6y)\hat{i} - 14yz\,\hat{j} + 20xz^2\,\hat{k}$, evaluate $\int_C \vec{f}.d\vec{r}$, where C is the line joining the point (0, 0, 0) to (1, 1, 1). 2.5

(b) If $\vec{f} = (2x^2 - 3z)\hat{i} - 2xy\,\hat{j} - 4x\hat{k}$ evaluate $\iiint_V (\nabla \times \vec{f})\, dV$, where V is the volume of the surface bounded by the coordinate planes and the plane $2x + 2y + z = 4$. 3

4. (a) State and prove Gauss theorem. 2.5

(b) Evaluate $\iint_S \vec{f} \cdot \hat{n}\, dS$, where $\vec{f} = z\hat{i} + x\,\hat{j} + 3y^2\, z\,\hat{k}$ and S is the surface of the cylinder $x^2 + y^2 = 16$ included in the first octant between $z = 0$ and $= 5$. 3

SECTION–III

5. Find the nature of the curve, centre and the equation of the conic referred to centre as origin for :

$13x^2 - 18xy + 37y^2 + 2x + 14y - 2 = 0$. 5.5

6. (a) A sphere of constant radius $2k$ passes through the origin and meets the axes in A, B and C. Show that the locus of the centroid of the tetrahedron OABC is the sphere $x^2 + y^2 + z^2 = k^2$. 2.5

(b) If two spheres of radii r_1 and r_2 cut orthogonally then prove that the radius of the common circle is $\frac{r_1 r_2}{\sqrt{r_1^2 + r_2^2}}$. 3

7. (a) Find the equation of the conic passing through (1,1) and also through the intersection of the conic $x^2 + 2xy + 5y^2 - 7x - 8y + 6 = 0$ with the straight lines $2x - y - 5 = 0$ and $3x + y - 11 = 0$. 2.5

(b) Find the enveloping cone of the sphere $x^2 + y^2 + z^2 - 2x + 2y - 2 = 0$ having vertex at (1,1,1). 3

SECTION–IV

8. (a) The normal at any point P of a central conicoid meets the three principal planes at points G_1, G_2 and G_3. Show that $PG_1 : PG_2 : PG_3 = a^{-1} : b^{-1} : c^{-1}$ 2.5

(b) Find the locus of the point from which three mutually perpendicular tangent lines can be drawn to the surface $a\,x^2 + b\,y^2 + c\,z^2 = 1$. 3

9. (a) Find the real central circular section of the ellipsoid $x^2 + 2y^2 + 6z^2 = 8$. 2.5

(b) Find the equations to the generators of the paraboloid $(x + y + z)(2x + y - z) = 6z$ which pass through the point (1,1,1). 3

Roll No. .....

Total Pages : 3

19-S

BAE/S-17

PUBLIC ADMINISTRATION

(Elements of Public Administration)

Paper–I

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *five* questions in all, selecting *one* question from each unit. All questions carry equal marks.

नोट : प्रत्येक इकाई से **एक** प्रश्न चुनते हुए कुल **पाँच** प्रश्न कीजिए। सभी प्रश्नों के अंक समान हैं।

UNIT–I (इकाई–I)

1. Attempt all parts :

(a) From which language the word "Administration" is derived ?

(b) Who presented the concept of POSDCORB ?

(c) What is full form of RTI and in which year it was passed ?

(d) How many members are there in Public Accounts Committee ?

(e) What are the *four* basis of organisation ?

(f) Hierarchy has only merits and no demerits. True/False

(g) Line agency advises the chief executive. True/False

(h) Decentralisation raises the morale of field officers. True/False

16

सभी भाग कीजिए :

(क) 'प्रशासन' शब्द किस भाषा से लिया गया है?

(ख) POSDCORB की अवधारणा किसने प्रस्तुत की?

(ग) R.T.I. का पूरा नाम लिखिए और यह किस वर्ष पास किया गया?

(घ) सार्वजनिक लेखा समिति में कितने सदस्य होते हैं?

(ङ) संगठन के चार आधारों के नाम लिखिए।

(च) पदसोपान के केवल लाभ हैं, हानियां नहीं। सही/गलत

(छ) सूत्र एजेंसी मुख्य कार्यपालक को सलाह देती है। सही/गलत

(ज) विकेन्द्रीकरण क्षेत्रीय अधिकारियों के मनोबल को बढ़ाता है। सही/गलत

UNIT–II (इकाई–II)

2. Differentiate Public administration from Private administration. 16

लोक प्रशासन एवं निजी प्रशासन के अंतर को स्पष्ट कीजिए।

3. Write an essay on Communication. 16

संचार पर एक निबंध लिखिए।

UNIT–III (इकाई–III)

4. Discuss features, merits and demerits of government department. 16

सरकारी विभाग की विशेषताओं, गुण तथा दोषों का वर्णन कीजिए।

5. How Parliament exercises control over Public Corporations ? Discuss. 16

संसद लोक निगमों पर नियंत्रण किस प्रकार स्थापित करती है? चर्चा कीजिए।

UNIT–IV (इकाई–IV)

6. Define good governance. Discuss its elements. 16

सुशासन की परिभाषा दीजिए। इसके मुख्य तत्त्वों का वर्णन कीजिए।

7. Describe composition, functions and role of Whitley councils. 16

व्हिटले परिषदों की रचना, कार्यों तथा भूमिका का वर्णन कीजिए।

UNIT–V (इकाई–V)

8. "How Budget is prepared and passed in India" ? Discuss.

भारत में बजट निर्माण तथा पारित होने की प्रक्रिया का वर्णन कीजिए।

9. Discuss methods of Judicial control over administration. 16

प्रशासन पर न्यायिक नियन्त्रण की विधियों की चर्चा कीजिए।

Roll No. ..... Total Pages : 7

BAE/S-17

35-S

POLITICAL SCIENCE

(Political Theory)

Paper–I

Opt. : I

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all, selecting atleast *one* question from each unit. All questions carry equal marks.

नोट : प्रत्येक इकाई से कम से कम **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्न कीजिए। सभी प्रश्नों के अंक समान हैं।

UNIT–A (इकाई–A)

1. Analyse the main features of Contemporary Political Theory. 16

समकालीन राजनीतिक सिद्धांत की मुख्य विशेषताओं का विश्लेषण कीजिए।

2. Define State and discuss its essential elements. 16

राज्य की परिभाषा दीजिए तथा इसके आवश्यक तत्त्वों का वर्णन कीजिए।

3. Critically discuss the Marxist theory of origin of state. 16

राज्य की उत्पत्ति के विषय में मार्क्सवादी सिद्धांत का आलोचनात्मक वर्णन करो।

4. Discuss main features of Sovereignty. 16

प्रभुसत्ता की मुख्य विशेषताएँ बताओ।

UNIT–B (इकाई–B)

5. Critically examine the theory of Natural Rights. 16

प्राकृतिक अधिकारों के सिद्धान्त की आलोचनात्मक समीक्षा कीजिए।

6. Make a distinction between Negative and Positive Liberty. 16

नकारात्मक व सकारात्मक स्वतन्त्रता में अन्तर स्पष्ट कीजिए।

7. Write a note on Socio-Economic Justice. 16

सामाजिक-आर्थिक न्याय पर एक नोट लिखो।

8. Define the conditions necessary for the working of Democracy. 16

लोकतंत्र के संचालन हेतु आवश्यक शर्तों का उल्लेख कीजिए।

UNIT–C (इकाई–C)

9. Short answer questions :

(a) Define Power. 3

(b) What is the difference between a State and Nation. 3

(c) Make a difference between 'De Jure' and 'De Facto' sovereignty. 2½

(d) Who is Citizen ? 2½

(e) Define Equality. 2½

(f) Discuss Legal Dimension of Justice. 2½

लघूत्तरीय प्रश्न :

(क) शक्ति क्या है?

(ख) राज्य एवं राष्ट्र में अन्तर बताइए।

(ग) 'वैधानिक' व 'व्यावहारिक' प्रभुसत्ता में अन्तर बताइए।

(घ) नागरिक किसे कहते हैं?

(ङ) समानता का वर्णन कीजिए।

(च) न्याय के कानूनी पक्ष का वर्णन कीजिए।

10. Objective type (Multiple choice) questions. (2×8=16)

वस्तुनिष्ठ प्रश्न

(a) Who is the father of Political Science ?

(i) Plato

(ii) Aristotle

(iii) Lenin

(iv) Mark.

राजनीति विज्ञान का पिता कौन है ?

(अ) प्लेटो

(ब) अरस्तू

(स) लेनिन

(द) मार्क्स।

(b) Who said, "Power is the Heart of Politics" ?

(i) Locke

(ii) Hobbs

(iii) Burke

(iv) Bekour.

'शक्ति राजनीति का हृदय है'-ये कथन किसका है?

(अ) लॉक

(ब) हॉब्स

(स) बर्क

(द) बेकउर।

(c) Who used the word State for the first time ?

(i) Machivalli

(ii) Hobbs

(iii) Laski

(iv) Burke.

सर्वप्रथम राज्य शब्द का प्रयोग किसने किया था।

(अ) मैक्यावली

(ब) हॉब्स

(स) लास्की

(द) बर्क।

(d) Who wrote, "Grammar of Politics" ?

(i) Gandhi

(ii) Nehru

(iii) Laski

(iv) Marx.

'राजनीति की व्याकरण' नामक पुस्तक किसने लिखी थी?

(अ) गाँधी

(ब) नेहरू

(स) लास्की

(द) मार्क्स।

(e) Who supported the theory of Natural Rights ?

(i) Hobbs

(ii) Locke

(iii) Roussoue

(iv) Lenin.

प्राकृतिक अधिकारों के सिद्धांत का समर्थन किसने किया था?

(अ) हॉब्स

(ब) लॉक

(स) रूशो

(द) लेनिन।

(f) Which one is an element of Justice ?

(i) Dishonesty

(ii) Truth

(iii) Both (i) and (ii)

(iv) None of these.

न्याय का तत्व कौन-सा है?

(अ) बेईमानी

(ब) सत्य

(स) (अ) और (ब) दोनों

(द) इनमें कोई नहीं।

(g) Which country has the Direct Democracy ?

(i) India

(ii) France

(iii) Italy

(iv) Switzerland.

किस देश में प्रत्यक्ष प्रजातंत्र है?

(अ) भारत

(ब) फ्रांस

(स) इटली

(द) स्विट्जरलैंड।

(h) What is the Target of Development ?

(i) To raise living standard

(ii) To help poor

(iii) Both (i) and (ii)

(iv) None of these.

विकास का उद्देश्य क्या है?

(अ) जीवन स्तर ऊपर उठाना

(ब) गरीब की सहायता

(स) (अ) और (ब) दोनों

(द) इनमें से कोई नहीं।

Roll No. ..... Total Pages : 3

BAE/S-17 **40-S**

HEALTH AND PHYSICAL EDUCATION

Time : Three Hours] [Maximum Marks : 50

Note : Attempt *five* questions in all, selecting *one* question from each unit. All questions carry equal marks.

नोट : प्रत्येक इकाई से **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

UNIT–I (इकाई–I)

1. Define Physical Education. Explain its scope and importance in detail. 10

शारीरिक शिक्षा की परिभाषा लिखो। इसके क्षेत्र और महत्त्व का विस्तार से वर्णन करो।

2. Write down qualities and qualifications of Physical Education teacher. 10

शारीरिक शिक्षा के शिक्षक के गुण और योग्यताएं लिखो।

UNIT–II (इकाई–II)

3. Explain in detail about History of Yoga and its importance in modern life. 10

योग के इतिहास का वर्णन करो तथा आधुनिक जीवन में इसके महत्त्व पर प्रकाश डालो।

4. Write down the History of Ancient Olympic Games and Asian Games. 10
एशियाई खेल और प्राचीन ओलम्पिक खेल का इतिहास लिखो।

UNIT–III (इकाई–III)

5. Explain in detail about postural deformities and their remedies. 10
आसन सम्बन्धी विकार और सुधार के उपायों का विस्तार से वर्णन करो।

6. Write down the meaning of personal hygiene and characteristics of healthy individual. 10
व्यक्तिगत स्वच्छता का अर्थ एवं स्वस्थ व्यक्ति की विशेषताएं लिखो।

UNIT–IV (इकाई–IV)

7. Explain in detail about respiratory system. 10
श्वसन संस्थान का विस्तार से वर्णन करो।

8. Explain in detail about effects of exercise on circulatory system. 10
व्यायाम से रक्त प्रवाह संस्थान पर पड़ने वाले प्रभाव का विस्तृत वर्णन करो।

UNIT–V (इकाई–V)

9. Explain in detail the following voluntary agencies :
   (a) Local Public Health Deptt.
   (b) State Health Deptt. of Public Health. 10

निम्न एजेंसीयों का वर्णन करो :
(क) लोकल जन स्वास्थ्य विभाग।
(ख) राज्य जन स्वास्थ्य विभाग।

10. Explain in detail about Balanced Diet and its constituents. 10
सन्तुलित आहार तथा इसके तत्वों का विस्तार से वर्णन करो।

Roll No. ..... Total Pages : 3

BAE/S-17

43-S

MUSIC (INSTRUMENTAL)

(Sitar)

Time : Three Hours] [Maximum Marks : 36

Note : Attempt *five* questions in all, selecting *one* question from each unit. Question No. 1 and 2 (Unit-1) carry 8 marks each and Question No. 3 to 10 carry 7 marks each.

नोट : प्रत्येक इकाई से **एक** प्रश्न का चुनाव करते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 एवं 2 (इकाई-1) 8-8 अंकों के हैं तथा प्रश्न संख्या 3 से 10 के 7-7 अंक हैं।

UNIT–I (इकाई–I)

1. Write the notation of Maseetkhani Gat of any *one* raga of your syllabus with two todas. (6+2=8)

अपने पाठ्यक्रम में से किसी **एक** राग की मसीतखानी गत की स्वरलिपि दो तोड़ों सहित लिखिए।

2. Write the notation on Razakhani Gat of your raag Bhupali of your syllabus with two todas. (6+2=8)

अपने पाठ्यक्रम में से राग भूपाली की रजाखानी गत को दो तोड़ों सहित लिखिए।

UNIT–II (इकाई–II)

3. Describe the raga 'Alhaiya Bilawal' in detail. 7

राग 'अल्हैया बिलावल' की विस्तृत व्याख्या कीजिए।

4. Describing the 'Jhaptal', write its notation in Ekgun, Dugun and Chaugun layakaries. 7

झपताल की व्याख्या करते हुए, इसकी तालिपि को एकगुण, दुगुण एवं चौगुण लयकारियों में लिखिए।

UNIT–III (इकाई–III)

5. Write about the following terms : (3+4=7)
Vadi-Samvadi and Khayal.

निम्न के बारे में लिखिए :

वादी-सम्वादी तथा ख्याल।

6. Write about the classification of Indian Musical Instruments. 7

भारतीय संगीत वाद्यों के वर्गीकरण के विषय में लिखिए।

UNIT–IV (इकाई–IV)

7. What is the folk music ? Explain. 7

लोक संगीत क्या है? व्याख्या करें।

8. Describe the merits and demerits of Instrumentalists (Vadak). 7

वादकों के गुणों व अवगुणों की व्याख्या कीजिए।

UNIT–V (इकाई–V)

9. Write about the role of 'Ustaad Vilayat Khan' towards Indian music. 7

भारतीय संगीत को 'उस्ताद विलायत खाँ' के योगदान के विषय में लिखिए।

10. What is the time-theory and explain its importance of music. 7

भारतीय संगीत में समय-सिद्धान्त को लिखें तथा इसकी विशेषता बताइए।

Roll No. .....

Total Pages : 3

BAE/S-17

50-S

MATHEMATICS

(Algebra and Trigonometry)

Paper : BM-101

Time : Three Hours]

[Maximum Marks : 30

Note : Attempt *five* questions is all, selecting at least *one* question from each section. All questions carry equal marks.

SECTION–I

1. (a) Reduce to a row Echelon form of the matrix

$$A = \begin{bmatrix} 2 & -1 & 3 & 4 \\ 0 & 3 & 4 & 1 \\ 2 & 3 & 7 & 5 \\ 2 & 5 & 11 & 6 \end{bmatrix}$$ and find $\rho_A(A)$. 3

(b) Prove that every Hermitian matrix A can be written as $A = B + i\,C$, where B is real and symmetric and C is real and skew symmetric. 3

2. (a) Express $A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$ as a product of elementary matrices. 3

(b) Prove that the set of vectors (0, 2, –4), (1, –2, –1), (1, –4, 3) is linearly dependent. 3

3. (a) Prove that $A = \begin{bmatrix} 2 & 6 & 1 \\ 0 & 1 & -6 \\ 3 & 4 & 2 \end{bmatrix}$ satisfies its characteristic equation. Also find its inverse, if it exists. 3

(b) Solve

$$2x - 3y + z = 9$$
$$x + y + z = 6$$
$$x - y + z = 2.$$ 3

SECTION–II

4. (a) Find the quotient and the remainder when $x^4 + x^3 - x^2 + 1$ is divided by $3x + 2$. 3

(b) Find the condition that the roots of the equation $ax^3 + bx^2 + cx + d = 0$ $(a \neq 0)$ may be in A.P. 3

5. (a) Diminish the roots of the equation

$$x^4 - 5x^3 + 7x^2 - 17x + 11 = 0$$

by 4. 3

(b) Solve the equation $x^3 + x^2 - 16x + 20 = 0$ by Cardon's method. 3

SECTION–III

6. (a) Prove that the order of every element of a finite group is a divisor of the order of the group. 3

(b) If $f : G \to G'$ is a homomorphism, then prove that kernel of 'f is a normal subgroup of G. 3

7. (a) Show that a skew field has no divisors. 3

(b) Prove that characteristic of an integral domain is either zero or a prime number. 3

8. (a) Prove that the intersection of two subrings is a ring. 3

(b) Prove that every finite group is isomorphic to a permutation group. 3

SECTION –IV

9. (a) Find all the values of $\left(\sqrt{3} + i\right)^{1/3}$. 3

(b) Form an equation whose roots are

$$\cos \frac{2\pi}{7}, \cos \frac{4\pi}{7}, \cos \frac{6\pi}{7}.$$ 3

10. (a) Resolve the following into real and imaginary part :

$$\text{Log } (4 + 3i).$$ 3

(b) Prove that

$$\frac{\pi}{2\sqrt{3}} = 1 - \frac{1}{3^2} + \frac{1}{5 \cdot 3^2} - \frac{1}{7 \cdot 3^3} + \ldots\ldots \infty.$$ 3

Roll No. ..... Total Pages : 3

BAE/S-17 **51-S**

MATHEMATICS

(Calculus)

Paper : BM-102

Time : Three Hours] [Maximum Marks : 30

Note : Attempt *five* questions in all, selecting at least *one* question from each section.

SECTION–I

1. (a) Show that $\lim_{x \to 0} \cos\left(\frac{1}{x}\right)$ does not exist. 3

(b) If $y = e^{m \cos^{-1} x}$, show that

$(1 - x^2)y_{n+2} - (2n + 1)xy_{n+1} - (n^2 + m^2)y_n = 0.$ 3

2. (a) If $f(x) = x^3 + 2x^2 - 5x + 11$, find the value of $f(9/10)$ with the help of Taylor series for $f(x + h)$. 3

(b) Find the radius of curvature for the curve

$r^n = a^n \cos n\theta.$ 3

3. (a) Find all the asymptotes of the curve

$r = 2a/(1 + 2 \cos \theta).$ 3

(b) Find point of inflexion on the curve

$x^2y = a^2(x - y)$. 3

SECTION–II

4. (a) Obtain a reduction formula for $\int x^n \cos x \, dx$, and hence evaluate $\int x^3 \cos x \, dx$. 3

(b) Find the length of the arc of the curve $x = e^\theta \sin \theta$, $y = e^\theta \cos \theta$ from $\theta = 0$ to $\theta = \pi/2$. 3

5. (a) Find the area outside the circle $r = 2a \cos \theta$ and inside the cardioid $r = a(1 + \cos \theta)$. 3

(b) Find the area of a loop of the curve $r^2 = a^2 \cos 2\theta$ and hence find its total area. 3

6. (a) Find the volume of solid of revolution obtained by rotating the area included between the curves $y^2 = x^3$ and $y^3 = x^2$ about the x-axis. 3

(b) A quadrant of a circle of radius a revolves round its chord. Find the area of the surface of the spindle generated. 3

SECTION–III

7. (a) Solve

$(x^2 + y^2 + 1)\,dx - 2xy\,dy = 0$. 3

(b) Solve

$yp^2 - 2xp + y = 0$. 3

8. (a) Solve

$(D^3 + 1)y = 3 + e^{-x} + 5e^{2x}$. 3

(b) Solve

$$(3x + 2)^2 \frac{d^2y}{dx^2} + 5(3x + 2)\frac{dy}{dx} - 3y = x^2 + x + 1.$$ 3

SECTION–IV

9. (a) Solve by removing first derivative :

$$\frac{d^2y}{dx^2} + \frac{2}{x}\frac{dy}{dx} = n^2 y.$$ 3

(b) Solve by the method of variation of parameters :

$$(1 - x)\frac{d^2y}{dx^2} + x\frac{dy}{dx} - y = (1 - x)^2.$$ 3

10. (a) Solve the simultaneous equations

$$\frac{d^2x}{dt^2} + 4x + y = te^{3t}$$

$$\frac{d^2y}{dt^2} + y - 2x = \cos^2 t.$$ 3

(b) Solve

$$\frac{dx}{x^2 - y^2 - z^2} = \frac{dy}{2xy} = \frac{dz}{2xz}.$$ 3

9. (a) Prove that the axes of the sections of the conicoid $ax^2 + by^2 + cz^2 = 1$, which pass through the line

$$\frac{x}{l} = \frac{y}{m} = \frac{z}{n},$$

lie on the cone

$$\left(\frac{b-c}{x}\right)(mz - ny) + \left(\frac{c-a}{y}\right)(nx - lz) + \left(\frac{a-b}{z}\right)(ly - mx) = 0.$$

3

(b) Find the equations of the generating lines of the hyperboloid $yz + 2zx + 3xy + 6 = 0$ which pass through the point $(-1, 0, 3)$. 3

10. Prove that the equation

$$2x^2 + 2y^2 + z^2 + 2yz - 2zx - 4xy + x + y = 0$$

represents an elliptic paraboloid. Reduce it to the standard form and find the co-ordinates of the vertex and equation of its axis. 6

Roll No. ..... Total Pages : 4

BAE/S-17 **52-S**

MATHEMATICS

(Vector Analysis and Geometry)

Paper : BM-103

Time : Three Hours] [Maximum Marks : 30

Note : Attempt *five* questions in all, selecting at least *one* question from each section.

SECTION–I

1. (a) Show that the four points having position vectors $4\hat{i} + 8\hat{j} + 12\hat{k}$, $2\hat{i} + 4\hat{j} + 6\hat{k}$, $3i + 5\hat{j} + 4\hat{k}$, $5\hat{i} + 8\hat{j} + 5\hat{k}$ are coplanar. 3

(b) Prove that the necessary and sufficient condition for the vector function $\vec{f}$ of a scalar variable t to have a constant magnitude is $\vec{f} \cdot \frac{d\vec{f}}{dt} = 0$. 3

2. (a) Let $\vec{r} = x\hat{i} + y\hat{j} + z\hat{k}$ and $r = |\vec{r}|$ then prove that $\nabla r^n = n\, r^{n-2}\, \vec{r}$. 3

(b) If $\vec{f} = xz^2\hat{i} + 2y\hat{j} - 13xz\hat{k}$ and $\vec{g} = 3xz\hat{i} + 12yz\hat{j} - 8z^2\hat{k}$ then find $(\vec{f} \times \nabla) \times \vec{g}$ at the point $(1, -1, 2)$. 3

SECTION–II

3. (a) Evaluate $\int_C \vec{f} \cdot d\vec{r}$ from (0, 0, 0) to (2, 4, 0) along the curve $y = 2x$, $z = 0$, where

$\vec{f} = y\hat{i} + (x + z)^2 \hat{j} + (x - z)^2 \hat{k}$. 3

(b) Evaluate $\iint_S \vec{f} \cdot \vec{n}\, dS$, where $\vec{f} = z\hat{i} + x\hat{j} + 3y^2 z\hat{k}$ and S is the surface of the cylinder $x^2 + y^2 = 16$ included in the first octant between $z = 0$ and $z = 5$. 3

4. (a) Apply Gauss's Divergence theorem to evaluate

$\iint_S [x^2\, dy\, dz + y^2\, dz\, dx + 2z(xy - x - y)\, dx\, dy]$,

where S is the surface of the cube $0 \le x \le 1$, $0 \le y \le 1$, $0 \le z \le 1$. 3

(b) Evaluate by Stroke's theorem

$\oint_C (e^x\, dx + 2y\, dy - dz)$, where C is the curve

$x^2 + y^2 = 4$, $z = 2$. 3

SECTION–III

5. (a) Find the centre and the lengths of axes of the conic

$x^2 - 5xy + y^2 + 8x - 20y + 15 = 0$. 3

(b) Find the equation of the conic passing through (1, 1) and also through the intersection of the conic $x^2 + 2xy + 5y^2 - 7x - 8y + 6 = 0$ with the straight lines $2x - y - 5 = 0$ and $3x + y - 11 = 0$. 3

6. (a) Prove that locus of the pole of a given straight line with respect to a system of confocal conics is a straight line. 3

(b) Prove that semi-latus rectum of any conic is a harmonic mean between the segments of any focal chord. 3

7. (a) Find the equation of the sphere which passes through the points (3, 0, 2), (–1, 1, 1), (2, –5, 4) and has its centre on the plane $2x + 3y + 4z = 6$. 3

(b) Show that the plane $2x - 2y + z + 12 = 0$ touches the sphere $x^2 + y^2 + z^2 - 2x - 4y + 2z - 3 = 0$, and find the point of contact. 3

SECTION–IV

8. (a) Find the equation of the tangent planes to $2x^2 - 6y^2 + 3z^2 - 5 = 0$ which pass through the line $x + 9y - 3z = 0$, and $3x - 3y + 6z - 5 = 0$. 3

(b) Find the locus of chords of the ellipsoid $\frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1$, which are bisected at (f, g, h). 3

(b) Fill in the blanks with the proper degree of adjectives given in brackets :

(i) Meena is ..... than Sanju. (tall)

(ii) Parneet is the ..... girl in our class. (intelligent)

(iii) This is a ..... car. (fast)

(iv) Do not come ..... than 12 o'clock. (late)

(c) Fill in the blanks with suitable conjunctions :

(i) Love ..... faith go together.

(ii) She came late ..... she finished in time.

(iii) I worked hard ..... failed.

(iv) Sandeep is ..... a painter, ... a singer.

(d) Underline the verbs groups in the following sentences :

(i) Pari talks very fast.

(ii) In 2020, I will have been teaching for twenty years.

(iii) Aman lived in Delhi for many years.

(iv) Mother is coking a tasty meal for us.

(12×1=12)

7. Write a paragraph in about 200 words on any *one* of the following topics :

(a) The Merits/Demerits of City Life.

(b) Menace of Terrorism.

(c) My Favourite Subject.

(d) The Value of Cleanliness. 8

Roll No. ..... Total Pages : 4

GSE/D-17 **701**

ENGLISH

Time : Three Hours] [Maximum Marks : 80

Note : All questions are compulsory.

1. Transcribe any *Eight* of the following words :

(a)	Mind.	(b)	Job.	(c)	Possess.
(d)	Weigh.	(e)	Toy.	(f)	Become.
(g)	Project.	(h)	Duty.	(i)	Above.
(j)	Hygiene.	(k)	Philosopher.	(l)	Ourselves.

(1×8=8)

2. Answer any *four* of the following questions in about 30 words :

(a) What do you understand by "The Big Bang Theory" ?

(b) Why can we not use the term 'monuments' for big dams ?

(c) What is the first formative influence on an individual ?

(d) What did Gandhiji express in his letters to his teachers ?

(e) What, according to Shastriji, is the reason that parents do not have enough time for their children ?

(f) What helped Valmiki to evolve the Ramayana ?

(2×4=8)

3. Answer any *five* questions in about 75-100 words each :

(a) How, according to Nirmal Verma, is one language different from the other ?

(b) What efforts did Gandhiji make to become an English gentleman ?

(c) Explain in brief the myth of creation, as told by the Mayans of Mexico and Central America.

(d) What is 'paralysis of sensibility' ? How is it measured ?

(e) What were the problems faced by peasants all over India ?

(f) What are the "three principal elements" that finally make up the identity of an individual ?

(g) What is the meaning of the terms 'Dev Bhumi' and 'Dev Bhasha' ? Why were they used for 'Bharat' ?

(h) What message does Dr. Kalam give at the end of his speech ?

(4×5=20)

4. Read the given passage and answer the questions that follow :

Big Dams are absolete. They are uncool. They're undemocratic. They're a government's way of accumulating authority (deciding who will get how much water and who will grow what and where). They are a brazen means of taking water, land and irrigation away from the poor and gifting it to the rich.

Their reservoirs displace huge populations of people leaving them homeless and destitute. Ecologically, they're in the doghouse. They lay the earth to waste. They cause floods. water logging, salinity, they spread disease. There is mounting evidence that links Big Dams to earthquakes.

Questions :

(i) What terms have been used to describe Big Dams ?

(ii) How have Big Dams accumulated authority for the government ?

(iii) How have reservoirs effected huge populations of people ?

(iv) What are the ecological disadvantages of Big Dams ?

4

5. (a) Give one word substitutes of any *two* of the followings :

(i) Activities to nurture extracurricular skills.

(ii) A piece of land bordering the sea.

(iii) A person who believes in God.

(b) Give Synonyms of any *two* of the following :

(i) Entire. (ii) Survive. (iii) Patience.

(c) Give Antonyms of any *two* of the following :

(i) Dead. (ii) Unknown. (iii) Polite.

(d) Explain any *two* of the following words/terms :

(i) Cosmos. (ii) Decipher. (iii) Habitat.

(4×2=8)

6. (A) Fill in the blanks using the correct form of verbs given in the brackets. (Any *twelve*) :

(i) He ..... a book when I saw him. (read)

(ii) The sun ..... in the east. (rise)

(iii) Mohan ..... to Delhi yesterday. (go)

(iv) Nisha ..... her breakfast now. (have)

(v) He ..... for college already. (leave)

(vi) A fluffy dough ..... good bread. (make)

(vii) My mother ..... to London next week. (travel)

(viii) Manoj ..... a car soon. (buy)

(ix) I could not hear what he ..... (say).

(x) I ..... to my father every week. (write)

(xi) Look, the moon ..... bright. (shine)

(xii) We ..... for a cab. (arrange)

(xiii) Ravi ..... very well. (sing)

(xiv) Neha and Poonan are good friends. They ..... (study) together since childhood.

(xv) There ..... not even a drop of water. (be)

(12×1=12)

(B) Attempt any *twelve* :

(a) Fill in the blanks wih suitable form (singular/plural) of the given nouns :

(i) ..... play football. (child)

(ii) I bought three ..... eggs from the shop. (dozen/dozens)

(iii) The ..... were falling from the trees. (leaf)

(e) Fill in the blanks with comparative or superlative degree of the word given in the brackets :

(i) Who is the ..... person in your family ? (old)

(ii) Which is the ..... day of the year ? (long)

(iii) Which is the ....., iron or lead ? (heavy)

(iv) This is by far the ..... of the two methods. (easy)

(v) Which will get us there ....., the train or the bus ? (quickly)

(f) Supply an appropriate verb in the blank spaces in the following sentences :

(i) Mathematics ..... his weakest subject.

(ii) His trousers ..... covered with mud.

(iii) An epidemic of measles ..... broken out in the district.

(iv) Most of the candidates ..... passed their examination.

(v) The food we took with us ..... insufficient. 30

6. Use any *ten* words in your own sentences :

After, Dwell, Consider, Ancient, Reign, Stupidity, Glory, Lean, Vanish, Sportive, Twilight, Rein, Deliverance, Offence, Ceremony. 10

7. Attempt any *four* of the following in about 50-70 words each :

Dramatic Monologue, Conceit, Simile, Satire, Allusion, Epigram. 8

Roll No. ..... Total Pages : 4

GSE/D-17 **702**

ENGLISH

Time : Three Hours] [Maximum Marks : 80

Note : Attempt all questions.

1. Explain with reference to the context :

His state
Is kingly–thousands at His biding speed
And post o'er land and ocean without rest :
They also serve who only stand and wait.

OR

And bending down beside the glowing bars,
Murmur, a little sadly, how love fled,
And paced upon the mountains overhead
And hid his face amid a crowd of stars. 8

2. Read tthe following extract and answer the questions that follow :

Shadwell alone my perfect image bears,
Mature in dullness from his tender years :
Shadwell alone of all my sons is he
Who stands confirmed in full stupidity.

(i) Who is the speaker in these lines ?

(ii) Who is Shadwell ?

(iii) How is Shadwell like the speaker ?

(iv) Who 'stands confirmed in full stupidity' ?

OR

Twilight and evening bell,
And after that the dark !
And may there be no sadness of farewell,
When I embark:

(i) Name the poem and the poet.

(ii) What does 'twilight' mean in these lines ?

(iii) What does the 'evening bell' stand for ?

(iv) What kind of farewell does the poet want at the time of his death ? 8

3. Give short answers to any *four* of the following questions :

(a) How has beauty been described as weak before Time ?

(b) Why does the poet say that death is not dreadful ?

(c) Explain : "The glory, jest and riddle of the world".

(d) What does the black boy say about his soul ?

(e) Why is the King George III despised ?

(f) "All's over then." What is over ?

(g) What features of pidgin Englsh are suggested in 'The Patriot' ? 8

4. Comment on the protective role of Nature in the poem "Three Years She Grew...".

OR

How does the writer prove that death is neither powerful nor fearful in the poem 'Death Be Not Proud' ? 8

5. Do as directed (Attempt any *twenty*).

(a) Insert *little* or *a little*, *few* or *a few* in the following sentences :

(i) Could you lend me ..... books ?

(ii) Mr. Brown was a man of ..... words.

(iii) I have spent nearly all my money, and have only ..... left.

(iv) You should be able to do the job if you have ..... patience.

(v) As the matter is outside our control, there is ..... we can do about it.

(b) Insert *fairly* or *rather* in the following sentences :

(i) We have had a ..... good holiday.

(ii) He is a ..... intelligent boy.

(iii) The price is ..... more than we wished to pay.

(iv) I find this exercise ..... difficult.

(v) It is ..... a shame to throw that book away.

(c) Supply the correct preposition in the following sentences :

(i) My uncle lives ..... a large house.

(ii) Miss Johnson is a typist ..... the Town Hall.

(iii) ..... five o'clock only two people had arrived.

(iv) She will be twenty ..... August 10th.

(v) We saw a plane ..... us.

(d) Fill in the blanks with the simple or the progressive form (present tense) of the verb given in the brackets :

(i) The Italians ..... in Italy. (live)

(ii) An honest person always ..... the truth. (tell)

(iii) That child ..... because it cannot find its mother. (cry)

(iv) The workmen ..... the road near our house. (repair)

(v) There are some birds that ..... every year. (migrate)

Roll No. .....

Total Pages : 4

GSE/D-17

705

HINDI

(Compulsory)

Time : Three Hours]

[Maximum Marks : 80

नोट : सभी प्रश्न अनिवार्य हैं।

1. निम्न में से **दो** की सप्रसंग व्याख्या कीजिए :

(क) कबीर यहु घर प्रेम का, खाला का घर नाहिं।
सीस उतारै हाथि करि, सो पैठे घर माहिं।
प्रेम न बाड़ी उपजै, प्रेम का हाटि बिकाइ।
राजा परजा जैहि रुचै, सिर दे सो ले जाइ।।

(ख) जागत, सोवत सपने सौंतुख कान्ह-कान्ह जकरी।
सुनतहि जोग लगत ऐसो अलि ! ज्यों करुई ककरी।
सोई व्याधि हमैं लै आए देखी सुनी न करी।
यह तौ सूर तिन्है लै दीजै जिनके मन चकरी।

(ग) मातु-पितौ जग जाइ तज्यो बिधिहूँ न लिखि कछु भाल भलाई।
नीच, निरादर भाजन, कादर कूकर-टूकन लागि ललाई।
राम-सुभाउ सुन्यो तुलसी प्रभुसों कह्यों बारक पेटु खलाई।
स्वारथको परमारथको रघुनाथु सो साहेबु, खोरि न लाई।

(ङ) कबीर की रचना का नाम बताएं।

(च) परमाल रासो के रचयिता का नाम लिखें।

(छ) घनानंद की प्रेमिका का क्या नाम था?

(ज) बिहारी की रचना का नाम लिखें। (1×8=8)

(घ) तनक हरि चितवाँ म्हारी ओर।

हम चितवाँ थैं चितवो णा हरि, हियड़ो बड़ो कठोर।

म्हारी आसा चितवणि थारी और वा दूजा ठौर।

अम्याँ ठाढ़ी अरज करूँ घूँ करताँ करताँ भोर।

मीराँ रे प्रभु हरि अविनासी, देस्यूँ प्राण अँकोर। (6×2=12)

2. घनानंद **अथवा** रसखान में से किसी एक का साहित्यिक परिचय दीजिए। 8

3. निम्न में से किन्हीं **चार** प्रश्नों के उत्तर 150 शब्दों में दीजिए :

(क) कबीर की सामाजिक चेतना पर संक्षेप में प्रकाश डालें।

(ख) सूरदास के वात्सल्य वर्णन पर विचार व्यक्त करें।

(ग) तुलसीदास की भाषा-शैली का संक्षेप में उल्लेख करें।

(घ) मीरा की प्रेम-भावना का परिचय दीजिए।

(ङ) बिहारी ने अपने दोहों में गागर में सागर भर दिया है-- सिद्ध करें।

(च) घनानंद के वियोग की मार्मिकता पर प्रकाश डालें।

(4×4=16)

4. निम्न में से **दो** का उत्तर दीजिए :

(क) हिन्दी साहित्य के इतिहास की लेखन परंपरा पर प्रकाश डालें।

(ख) आदिकाल के नामकरण की समस्या पर अपना मत व्यक्त करें।

(ग) आदिकालीन परिस्थितियों का वर्णन कीजिए।

(घ) रासो काल परंपरा का उल्लेख कीजिए। (8×2=16)

5. निम्न में से किन्हीं **दो** प्रश्नों के उत्तर 150 शब्दों में दीजिए :

(क) पृथ्वीराज रासो का संक्षिप्त परिचय दीजिए।

(ख) अमीर खुसरो की पहेलियों पर टिप्पणी लिखिए।

(ग) बीसलदेव रासो का संक्षेप में परिचय दीजिए।

(घ) आदिकालीन साहित्य में राष्ट्रीयता का अभाव है, सिद्ध कीजिए। (5×2=10)

6. निम्न में से किन्हीं **दो** के उत्तर दीजिए :

(क) विभाव से क्या अभिप्राय है, यह कितने प्रकार के होते हैं?

(ख) करुण रस की परिभाषा व उदाहरण देकर स्पष्ट करें।

(ग) दोहा छंद की परिभाषा व उदाहरण दीजिए।

(घ) रूपक अलंकार की परिभाषा एवं उदाहरण देकर स्पष्ट करें। (5×2=10)

7. निम्न सभी वस्तुनिष्ठ प्रश्नों के उत्तर दीजिए :

(क) वीर रस का स्थायी भाव कौन-सा है?

(ख) शब्द-शक्ति कितने प्रकार की होती है?

(ग) काव्य के गुणों के नाम लिखें।

(घ) तुलसी की माता का क्या नाम था?

Roll No. .....

Total Pages : 7

708

GSE/D–17

PUNJABI (ELECTIVE)

Time : Three Hours]

[Maximum Marks : 80

1. ਹੇਠ ਲਿਖੇ ਕਵੀਆਂ ਵਿਚੋਂ *ਇਕ* ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਵਿਚਲੀ ਦੇਣ ਬਾਰੇ ਨਿਬੰਧ ਲਿਖੋ :

   (ੳ) ਭਾਈ ਵੀਰ ਸਿੰਘ

   (ਅ) ਪ੍ਰੋ: ਮੋਹਨ ਸਿੰਘ

   (ੲ) ਹਰਿਭਜਨ ਸਿੰਘ ਕੋਮਲ। 5

2. ਹੇਠ ਲਿਖੇ ਕਾਵਿ-ਬੰਦਾਂ ਵਿਚੋਂ *ਦੋ* ਦੀ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ ਕਰੋ :

   (ੳ) ਸਵਾਦ ਦੀ ਅਗੰਮੀ ਆਇਆ
   ਰਸ ਝਰਨਾਟ ਉੱਠਿਆ
   ਲੂੰ ਲੂੰ ਲਹਿਰ ਉੱਠਿਆ
   ਤੇ ਕਾਂਬਾ ਮਿੱਠਾ ਆ ਗਿਆ।

(ਅ) ਤੀਜੀ ਮਾਂ ਪੰਜਾਬੀ ਬੋਲੀ, ਬਚਪਨ ਵਿਚ ਮਾਂ ਪਾਸੋਂ ਸਿੱਖੀ,
ਧੋਤੀ, ਮਾਂਜੀ, ਪਹਿਨੀ-ਪੱਚਰੀ, ਨਜ਼ਮ ਨਸਰ ਬੋਲੀ ਤੇ ਲਿੱਖੀ
ਮਤਰੇਈਆਂ ਨੂੰ ਪਰੇ ਹਟਾ ਕੇ, ਪਟਰਾਣੀ ਨੂੰ ਤਖ਼ਤ ਬਹਾਇਆ
ਏਹੋ ਜਿਹੀ ਮਨੋਹਰ ਮਿੱਠੀ, ਹੋਰ ਕੋਈ ਬੋਲੀ ਨਹੀਂ ਡਿੱਠੀ।

(ਏ) ਅਸਾਂ ਤਾਂ ਰਹਿਣਾ ਏ ਪਿੰਜਰੇ ਪਿੰਜਰੇ
ਮਾਰ ਤੇ ਭਾਵੇਂ ਮਾਰ ਨ ਜਿੰਦਰੇ
ਚਿੜੀਆਂ ਦਾ ਚੰਬਾ ਉਡਣਾ ਚਾਰੇ
ਉਡੀਏ ਤਾਂ ਉਡੀਏ ਕਿਹੜੀ ਰਾਹੇ
ਬਾਬਲ ਹੱਥੀਂ ਆਪ ਉਡਾਏ
ਤਾੜ ਕੇ ਪਿੰਜਰੇ ਮਾਰ ਕੇ ਜਿੰਦਰੇ।

(ਸ) ਜਿਸ ਜੰਗਲ 'ਚ ਅਸੀਂ,
ਅਣਚਾਹੇ ਉੱਗੇ ਹਾਂ,
ਉਥੇ ਰੁੜੀ ਦੀ ਤਾਂ ਸ਼ਾਇਦ,
ਹਰ ਵਰ੍ਹੇ ਸੁਣੀ ਜਾਂਦੀ ਹੈ,
ਬੰਦੇ ਦੀ,
ਬਾਰਾਂ ਵਰ੍ਹੇ ਪਿੱਛੋਂ ਵੀ ਨਹੀਂ,
ਇਹ ਵੀ ਜ਼ਰੂਰੀ ਨਹੀਂ,

ਕਿ ਬਣਵਾਸ ਬਾਰਾਂ ਵਰ੍ਹਿਆਂ ਦਾ ਹੀ ਹੋਵੇ,
ਘੁੱਗ ਵਸਦੇ ਸ਼ਹਿਰ ਵਿਚ,
ਸਾਰੀ ਉਮਰ ਹੀ,
ਬਣਵਾਸ ਜਿਹੀ ਹੋ ਸਕਦੀ ਹੈ। 5+5=10

3. ਨਾਨਕ ਸਿੰਘ ਦਾ ਪੰਜਾਬੀ ਨਾਵਲ ਵਿਚਲੀਆਂ ਪ੍ਰਾਪਤੀਆਂ ਉਪਰ ਚਰਚਾ ਕਰੋ। 5

4. ਪਵਿੱਤਰ ਪਾਪੀ ਨਾਵਲ ਦੀ ਮੂਲ ਸਮੱਸਿਆ ਕੀ ਹੈ?

ਜਾਂ

ਕੇਦਾਰ ਦਾ ਚਰਿਤਰ ਚਿਤਰਣ ਕਰੋ। 10

5. ਸਕੂਲ ਦੇ ਪ੍ਰਿੰਸੀਪਲ ਨੂੰ ਪੰਜਾਬੀ ਅਧਿਆਪਕ ਦੀ ਨੌਕਰੀ ਲਈ ਇਕ ਬਿਨੈ-ਪੱਤਰ ਲਿਖੋ।

ਜਾਂ

ਆਪਣੇ ਰਾਜ ਦੇ ਵਿਦਿਆ ਮੰਤਰੀ ਨੂੰ ਇਕ ਚਿੱਠੀ ਲਿਖੋ ਜਿਸ ਵਿਚ ਤੁਹਾਡੇ ਪਿੰਡ ਦੇ ਸਕੂਲ ਵਿਚ ਪੰਜਾਬੀ ਅਧਿਆਪਕ ਦੀ ਭਰਤੀ ਦਾ ਪ੍ਰਬੰਧ ਕੀਤਾ ਜਾਵੇ। 10

6. ਹੇਠ ਲਿਖੇ ਮੁਹਾਵਰਿਆਂ ਵਿਚੋਂ ਕਿਸੇ *ਦਸ* ਦੇ ਅਰਥ ਦਸ ਕੇ ਵਾਕ ਬਣਾਓ :

1. ਉੱਨ ਲਾਹੁਣੀ
2. ਉੱਲੂ ਬੋਲਣੇ
3. ਅੰਗ ਪਾਲਣਾ
4. ਇਕ ਜਾਨ ਹੋਣਾ
5. ਸੱਪ ਸੁੰਘ ਜਾਣਾ
6. ਸਿੱਲ ਪੱਥਰ ਹੋਣਾ
7. ਸੇਕ ਲੱਗਣਾ
8. ਹੱਥ ਅੱਡਣਾ
9. ਹੱਡਾਂ ਵਿਚ ਪਾਣੀ ਪੈਣਾ
10. ਕਮਰ ਟੁੱਟ ਜਾਣੀ
11. ਮਿਰਚਾਂ ਲੱਗਣੀਆਂ। 10

7. ਹੇਠ ਲਿਖੇ ਸ਼ਬਦਾਂ ਵਿਚੋਂ ਦਸਾਂ ਦੇ ਸ਼ਬਦ-ਜੋੜ ਸ਼ੁੱਧ ਕਰੋ :

ਸੋਹਰਾ, ਸੇਹਤ, ਕਚੈਹਰੀ, ਕ੍ਰਿਆ, ਅਪ੍ਰੈਲ, ਕੱਨ, ਘਿਉ, ਤੀਸ, ਕੰਗਾ, ਖੰਗ, ਪੀਂਗ, ਸੂਜ। 10

8. ਹੇਠ ਲਿਖੇ ਅੰਗ੍ਰੇਜ਼ੀ ਸ਼ਬਦਾਂ ਵਿਚੋਂ ਕਿਸੇ *ਦਸ* ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ ਕਰੋ :

Action, Audit, Capital, Copy, Entry, Eligible, Claim, Basic-pay, Compliance, Arrears, Bill. 10

9. ਹੇਠ ਲਿਖਿਆਂ ਵਿਚੋਂ ਠੀਕ ਉੱਤਰ ਚੁਣੋ :

1. ਕਿੱਦਰ ਕਿਸ ਦਾ ਪ੍ਰਤੀਕ ਹੈ?

   (ੳ) ਸੂਫੀ ਦਾ (ਅ) ਤਿਆਗੀ ਦਾ

   (ੲ) ਸੰਨਿਆਸੀ ਦਾ (ਸ) ਜਗਿਆਸੂ ਦਾ

2. ਵਿਸਾਖੀ ਦੇ ਮੇਲੇ ਉਪਰ ਕਿਹੜੀ ਫਸਲ ਪੱਕ ਜਾਂਦੀ ਹੈ?

   (ੳ) ਝੋਨਾ (ਅ) ਕਮਾਦ

   (ੲ) ਕਣਕ (ਸ) ਮੱਕੀ

3. 'ਤ੍ਰੈ-ਮਾਵਾਂ' ਕਵਿਤਾ ਦਾ ਲੇਖਕ ਹੈ

   (ੳ) ਭਾਈ ਵੀਰ ਸਿੰਘ (ਅ) ਪ੍ਰੋ: ਪੂਰਨ ਸਿੰਘ

   (ੲ) ਧਨੀ ਰਾਮ ਚਾਤ੍ਰਿਕ (ਸ) ਸਤੀ ਕੁਮਾਰ

4. 'ਅੰਬੀ ਦਾ ਬੂਟਾ' ਕਿਥੇ ਲੱਗਾ ਹੈ?

(ੳ) ਖੇਤਾਂ ਵਿਚ (ਅ) ਸੜਕ ਕਿਨਾਰੇ

(ੲ) ਵਿਹੜੇ ਵਿਚ (ਸ) ਪਾਰਕ ਵਿਚ

5. 'ਸਮਾਜਵਾਦ' ਕਵਿਤਾ ਦਾ ਲੇਖਕ ਹੈ

(ੳ) ਭਾਈ ਵੀਰ ਸਿੰਘ (ਅ) ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ

(ੲ) ਸਵੀ (ਸ) ਬਾਵਾ ਬਲਵੰਤ 5

10. ਹੇਠ ਲਿਖਿਆਂ ਵਿਚੋਂ ਠੀਕ ਉੱਤਰ ਚੁਣੋ :

1. ਨਾਨਕ ਸਿੰਘ ਦਾ ਨਾਵਲ ਹੈ

(ੳ) ਪਵਿੱਤਰ ਆਦਮੀ (ਅ) ਪਵਿੱਤਰ ਪਾਪੀ

(ੲ) ਪਵਿੱਤਰ ਦੇਵਤਾ (ਸ) ਪਵਿੱਤਰ ਘੋੜਾ

2. ਪਵਿੱਤਰ ਪਾਪੀ ਨਾਵਲ ਦਾ ਨਾਇਕ ਹੈ

(ੳ) ਕੇਦਾਰ ਸਿੰਘ

(ਅ) ਕਪੂਰ ਸਿੰਘ

(ੲ) ਕਿਰਪਾਲ ਸਿੰਘ

(ਸ) ਕਿਦਾਰ

7(

3. ਵਿੰਟਸ ਅਤੇ ਵੀਣਾ ਵਿਚਲਾ ਰਿਸ਼ਤਾ ਹੈ

ੳ ਪੁੱਤ ਦਾ (ਅ) ਮਾਸੀ ਦਾ

ੲ ਭੂਆ ਦਾ (ਸ) ਭੈਣ ਦਾ

4. ਅਤਰ ਸਿੰਘ ਦੀ ਦੁਕਾਨ ਤੇ ਕੰਮ ਕਰਨ ਵਾਲੇ ਪਾਤਰ ਦਾ ਨਾਂ ਹੈ

ੳ ਬ੍ਰਿਜ ਲਾਲ (ਅ) ਖਰੈਤੀ ਲਾਲ

ੲ ਪੰਨਾ ਲਾਲ (ਸ) ਰਾਮ ਲਾਲ

5. ਪੰਨਾ ਲਾਲ ਘਰੋਂ ਭੱਜ ਕੇ ਕਿਸ ਸ਼ਹਿਰ ਜਾਂਦਾ ਹੈ?

ੳ ਵਾਰਾਣਸੀ (ਅ) ਹਰਿਦੁਆਰ

ੲ ਅੰਮ੍ਰਿਤਸਰ (ਸ) ਦੁਆਰਕਾ 5

Roll No. .....

Total Pages : 3

GSE/D-17

709

SANSKRIT

(Compulsory)

Time : Three Hours]

[Maximum Marks : 80

नोट : सभी प्रश्न अनिवार्य हैं।

1. निम्नलिखित सभी प्रश्नों के उत्तर दीजिए :

(क) महाभारत के रचयिता का नाम लिखिए।

(ख) 'धर्मज्ञो रामः' पाठ किस मूल ग्रन्थ से लिया गया है?

(ग) 'पञ्चतन्त्र' किस कवि की रचना है?

(घ) 'शशकस्य चातुर्यम्' किस ग्रन्थ से उद्धृत है?

(ङ) 'फलानाम्' पद में कौन-सी विभक्ति तथा वचन प्रयुक्त हुए हैं?

(च) 'अभवन्' पद धातु के किस पुरुष और वचन का रूप है?

(छ) 'हितोपदेशः' तथा 'परीक्षा' में सन्धि-विच्छेद कीजिए।

(ज) श्रीमद्भगवद्गीता में भगवान श्रीकृष्ण किसको उपदेश देते हैं?

(8×2=16)

2. (क) किन्हीं **दो** श्लोकों का सरलार्थ कीजिए :

(अ) राज्यं यदि हि रामस्य भरतस्यापि तत्तथा।
मन्यते हि यथाऽऽत्मानं तथा भ्रातृंस्तु राघवः।।

(ब) अर्थेन हि विहिनस्य पुरुषस्याल्प मेधसः।
विच्छिद्यन्ते क्रियाः सर्वाः ग्रीष्मे कुसरितोयथा।

(स) मधुमन्मे निश्क्रमणं मधुमन्मे परायणम्।
वाचा वदामि मधुमद् भूयासं मधुसदृशः।।

(द) इह सन्तो न वा सन्ति सतो वा नानुवर्तसे।
यथा हि विपरीता ते बुद्धिराचारवर्जिता।। (2×5=10)

(ख) 'वयं त्वां भजामः' **अथवा** 'धर्मज्ञो रामः' पाठ का सार अपने शब्दों में लिखिए। 6

3. (क) निम्नलिखित में से किन्हीं **दो** का सरलार्थ कीजिए :

(अ) अस्ति वाराणस्यां कर्पूरपटको नाम रजकः। स रात्रौ गाढ-निद्रयां प्रसुप्तः। तदनन्तरं तद्गृहद्रव्याणि हर्तुं चौरः प्रविष्टः। तस्य प्राङ्गणे गर्दभो बद्धस्तिष्ठति। कुक्कुरश्चोपविष्टोऽस्ति। अथ गर्दभः श्वानमाह- सखे, भवतस्तादयं व्यापारः। तत्किमिति त्वमुच्चैः शब्दं कृत्वा स्वामिनं न जागरयसि।'

(ब) ततो विजय नाम वृद्धशशकोऽवदत् 'मा विषीदतु मयाऽत्र प्रतिकारः कर्त्तव्यः' ततोऽसौ प्रतिज्ञाय चलितः, गच्छतां च तेनाऽऽलोचितम्, 'कथं मया गजयूथनाथ समीपे स्थितेन वक्तव्यम्?' अतोऽहं पर्वतशिखरमारुह्य यूथनाथं सवांदयामि।' तथाऽनुष्ठिते सति यूथनाथ उवाच– 'कस्त्वम् कुतः समायातः'?

(स) भासुरक आह- अहो सत्यमभिहितं भवद्भिः। परं यदि मयोपविष्टस्यात्र नित्यमेव नैकः श्वापदः समागमिष्यति, तन्नूनं सर्वानपि भक्षयिष्यामि। अथ ते तथैव प्रतिज्ञाय निर्वृतिभाजस्तत्रैव वने निर्भयाः पर्यटयन्ति। एकश्च क्रमेण याति।

(द) न स्थातव्यं न गन्तव्यं दुर्जनेन समं क्वचित्।
काकसङ्गाद्हतो हंसस्तिष्ठन् गच्छंश्च वर्तकः।।
(2×5=10)

(ख) 'बुद्धिर्यस्य बलं तस्य' **अथवा** 'नीलवर्णः श्रृगालः' पाठ का सार लिखिए। 6

4. (क) किन्हीं **दो** के यथानिर्दिष्ट रूप लिखिए :

कवि – तृतीया, चतुर्थी।

फल – प्रथमा, द्वितीया।

पितृ – षष्ठी, सप्तमी।

बालक – प्रथमा, द्वितीया। (2×4=8)

(ख) निम्नलिखित में से किन्हीं **दो** धातु के यथानिर्दिष्ट लकारों में सभी पुरुष और वचनों के रूप लिखिए :

√भू – लृट लकार।

√वद् – लट् लकार।

√दा – लङ् लकार।

√स्था – लोट् लकार। (2×4=8)

5. (क) निम्नलिखित में से किन्हीं **चार** में सन्धि तथा **चार** में सन्धि-विच्छेद कीजिए :

(i) पर + उपकारः, पो + अनः, सदा + एव, नग + इन्द्रः, विद्या + आलय, गै + अकः, प्रति + एकम्, परि + ईक्षा। (4×1=4)

(ii) यद्यपि, दिनाङ्कः, प्रतीक्षा, नरेन्द्रः, महर्षिः, सूर्यादय, लवणः, नायकः। (4×1=4)

(ख) 'श्रीमद्भगवद्गीता' के **चार** कण्ठस्थ श्लोकों का शुद्ध लेखन कीजिए। (4×2=8)

Roll No. .....

Total Pages : 3

GSE/D-17

712

SANSKRIT

(Elective)

Time : Three Hours]

[Maximum Marks : 80

1. निम्नलिखित सभी प्रश्नों के उत्तर दीजिए :

(क) नारायण पण्डित की रचना का नाम लिखिए।

(ख) हितोपदेश में राजकुमारों को किस विद्वान ने शिक्षा दी?

(ग) नीतिशतक के लेखक का नाम लिखिए।

(घ) भर्तृहरि ने कितने शतकों की रचना की?

(ङ) 'रामस्य' पद किस विभक्ति और वचन का रूप है?

(च) 'गमिष्यति' पद में कौन-सा लकार है?

(छ) 'अष्टाध्यायी' के लेखक का नाम लिखिए।

(ज) सन्धि किसे कहते हैं? (8×2=16)

2. (क) किन्हीं **दो** का हिन्दी में सरलार्थ कीजिए :

(अ) काव्यशास्त्रविनोदेन कालो गच्छति धीमताम्।
व्यसनेन च मूर्खाणां निद्रया कलहेन वा।।

(ब) मातृवत् परदारेषु परद्रव्येषु लोष्ठवत्।
आत्मवत् सर्वभूतेषु यः पश्यति सः पण्डितः।।

(स) अहमेकदा दक्षिणारण्ये चरन्नपश्यम्। एको वृद्धो व्याघ्रः स्नातः कुशहस्तः सरस्तीरे ब्रूते– 'भोः भोः पान्थाः। इदं सुवर्णकङ्कणं गृह्यताम्, ततो लोभाकृष्टेन केनचित्पान्थेनालोचितम् –' "भाग्येनैतत् सम्भवति।"

(द) इत्याकर्ण्य हिरण्यकः प्रहृष्टमनः पुलकितः सन्नब्रवीत्– साधु मित्र ! साधु । अनेन आश्रितवात्सल्येन त्रैलोक्यस्यापि प्रभुत्वं त्वयि युज्यते। एवमुक्त्वा तेन सर्वेषां बन्धनानि छिन्नानि। (2×5=10)

(ख) **'हिरण-गीदड़**-कथा' अथवा '**गीध-बिलाव**-कथा' का सार लिखिए। 6

3. (क) किन्हीं **दो** श्लोकों का सरलार्थ कीजिए :

(अ) अज्ञः सुखमाराध्यः सुखतरमाराध्यते विशेषज्ञः।
ज्ञानलवदुर्विदग्धं ब्रह्माऽपि तं नरं न रञ्जयति।।

(ब) येषां न विद्या न तपो न ज्ञानं न शीलं न गुणो न धर्मः।
ते मर्त्यलोके भुविभारभूता मनुष्यरूपेण मृगाश्चरन्ति।।

(स) दानं भोगो नाशस्तिस्रो गतयो भवन्ति वितस्य।
यो न ददाति न भुङ्क्ते तस्य तृतीया गतिर्भवति।।

(द) परिवर्तिनि संसारे मृतः को वा न जायते।
सः जातो येन जातेन याति वंशः समुन्नतिम्।। (2×5=10)

(ख) किसी **एक** सूक्ति की सप्रसंग व्याख्या कीजिए :

"विभूषणम् मौनमपण्डितानाम्।"

अथवा

"सर्वे गुणाः काञ्चनमाश्रयन्ते।" 6

4. (क) किन्हीं **दो** के यथानिर्दिष्ट विभक्तियों में रूप लिखिए :

लता (प्रथमा, तृतीया)

भानु (द्वितीया, तृतीया)

राम (चतुर्थी, षष्ठी)

पितृ (प्रथमा, तृतीया)। (2×4=8)

(ख) किन्हीं **दो** धातुओं के यथानिर्दिष्ट लकारों में रूप लिखिए :

नम् (लट् लकार)

गम् (लृट् लकार)

हस् (लोट् लकार)

भू (लङ् लकार)। (2×4=8)

5. (क) किन्ही **चार** की सन्धि कीजिए :

दिन + अंकः, विद्या + अर्थी, पर + उपकारः, कपि + ईशः, नर + इन्द्रः, मेघ + आलयः, इति + आदि, सत् + जनः।
(1×4=4)

(ख) किन्ही **चार** का सन्धि-विच्छेद कीजिए :

देवालयः, हितोपदेशः, मुनीशः, सुरेन्द्रः, यद्यपि, गणेशः, स्वागतम्, जगन्नाथः। (1×4=4)

(ग) प्रश्न-पत्र में पूछे गए श्लोकों से भिन्न किन्हीं **दो** श्लोकों का लेखन कीजिए। (2×4=8)

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GSE/D-17 **718**

HISTORY

(Ancient India From Earliest Times to Gupta Age)

Opt. (i)

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question from each unit. For visually handicapped candidates the part relating to the explanatory note on Map will carry full marks.

नोट : कुल **पाँच** प्रश्न कीजिए। प्रश्न सं. 1 अनिवार्य है। प्रत्येक इकाई से **एक** प्रश्न का चयन कीजिए। नेत्रहीन विद्यार्थियों के लिए मानचित्र के व्याख्यात्मक टिप्पणी वाले भाग के लिए पूरे अंक होंगे।

Compulsory Question (अनिवार्य प्रश्न)

1. Answer the following Multiple choice questions :

निम्न बहुविकल्पीय प्रश्नों के उत्तर दीजिए :

(a) Who is known as the "Father of History" ?

(i) Livi

(ii) Herodotus

(iii) Kautilya

(iv) Huinsang.

'इतिहास का पिता' किसे माना जाता है?

(i) लिवी

(ii) हेरोडोटस

(iii) कौटिल्य

(iv) ह्यूएनसांग।

(b) Who wrote 'Mudra Rakshas' ?

(i) Visakhdutt

(ii) Muni Mahendra

(iii) Banbatta

(iv) None of these.

'मुद्राराक्षस' के लेखक कौन हैं?

(i) विशाखदत्त

(ii) मुनि महेन्द्र

(iii) बाणभट्ट

(iv) इनमें से कोई नहीं।

(c) Buddha Dev died at

(i) Kausambi

(ii) Sarnath

(iii) Kusinara

(iv) Vaisali.

बुद्ध देव की मृत्यु हुई थी

(i) कौशाम्बी में

(ii) सारनाथ में

(iii) कुशीनारा में

(iv) वैशाली में।

(d) Which of the following Vedas was the earliest composition ?

(i) Rigveda

(ii) Samveda

(iii) Yajurveda

(iv) Atharvaveda.

किस वेद की रचना सबसे पहले हुई थी?

(i) ऋग्वेद

(ii) सामवेद

(iii) यजुर्वेद

(iv) अथर्ववेद।

(e) Capital of Anga Mahajanpada was

(i) Champa

(ii) Magadh

(iii) Vaisali

(iv) Virat.

अंग महाजनपद की राजधानी थी

(i) चम्पा

(ii) मगध

(iii) वैशाली

(iv) विराट।

(f) Which Buddhist Council was held during the reign of Ashoka ?

(i) First

(ii) Second

(iii) Third

(iv) Fourth.

अशोक के काल में कौन-सी बौद्ध महासभा हुई थी?

(i) प्रथम

(ii) द्वितीय

(iii) तृतीय

(iv) चतुर्थ।

(g) The famous Mathematician of the Gupta period was

(i) Bhasa

(ii) Sudraka

(iii) Aryabhatt

(iv) Manu.

गुप्तकाल के प्रसिद्ध गणितशास्त्री थे

(i) भास

(ii) शूद्रक

(iii) आर्यभट्ट

(iv) मनु।

(h) Chinese Traveller Hueinsang visited India during the reign of

(i) Harsh

(ii) Chandragupta Vikram-II

(iii) Ashoka

(iv) None of these. (2×8)

चीनी यात्री ह्यूएनसांग ने भारत की यात्रा किसके राज्यकाल में की थी?

(i) हर्ष

(ii) चन्द्रगुप्त विक्रम-II

(iii) अशोक

(iv) इनमें से कोई नहीं।

UNIT–I (इकाई–I)

2. Describe the literary sources of Ancient Indian History. 16

प्राचीन भारतीय इतिहास के साहित्यिक स्रोतों का वर्णन कीजिए।

3. Write a detailed note on Neolithic Age. 16

नवपाषाण काल पर एक विस्तृत लेख लिखें।

UNIT–II (इकाई–II)

4. Give an account of the life and teachings of Lord Buddha. 16

महात्मा बुद्ध के जीवन और शिक्षाओं का वृतान्त दीजिए।

5. Write a note on Sixteen Mahajanpadas. 16

सोलह महाजनपदों पर एक लेख लिखें।

UNIT–III (इकाई–III)

6. Point out the main features of Maurya Administration. 16

मौर्य प्रशासन की मुख्य विशेषताओं को उजागर कीजिए।

7. Who were Kushans ? Describe the achievements of Kanishka. 16

कुषाण कौन थे? कनिष्क की सफलताओं का वर्णन कीजिए।

UNIT–IV (इकाई–IV)

8. On the outline map of India, show the important sites of Harappan civilization. Add a note also. (10+6=16)

भारत के रेखा-मानचित्र पर हड़प्पा सभ्यता के मुख्य स्थलों को दर्शाइए। एक लेख भी लिखें।

9. On the outline map of India, show the Extent of Samudragupta Empire. Add a note also. (10+6=16)

भारत के रेखा-मानचित्र पर समुद्रगुप्त के साम्राज्य विस्तार को दर्शाइए। एक लेख भी लिखें।

(f) Who preside over the Rajya Sabha at present ?

(i) Mr. Arun Jaitley (ii) Mr. Venkaiah Naidu

(iii) Mr. Rajnath Singh (iv) Mr. Narender Modi.

वर्तमान में राज्य सभा की अध्यक्षता कौन करते हैं ?

(i) श्री अरुण जेटली (ii) श्री वेंकैया नायडू

(iii) श्री राजनाथ सिंह (iv) श्री नरेन्द्र मोदी।

(g) How many members of Constituent Assembly signed the document which came into being on 26th Jan., 1950 as Indian Constitution ?

(i) 250 (ii) 283

(iii) 328 (iv) 282.

विधान सभा के कितने सदस्यों ने भारतीय संविधान के दस्तावेजों पर जो कि 26 जनवरी, 1950 को अस्तित्व में आया था, हस्ताक्षर किए थे ?

(i) 250 (ii) 283

(iii) 328 (iv) 282.

(h) When was Indian Constitution adopted by Constituent Assembly ?

(i) 26 Jan., 1949

(ii) 26 Nov., 1949

(iii) 15 Aug., 1947

(iv) 26 Jan., 1950.

विधान सभा द्वारा भारतीय संविधान को कब अपनाया गया था ?

(i) 26 जनवरी, 1949 को

(ii) 26 नवम्बर, 1949 को

(iii) 15 अगस्त, 1947 को

(iv) 26 जनवरी, 1950 को।

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POLITICAL SCIENCE

(Indian Constitution)

Opt. (i)

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. Question No. 9 in Unit-V is compulsory.

नोट : प्रत्येक इकाई से **एक** प्रश्न का चयन करते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए। इकाई-V का प्रश्न संख्या 9 अनिवार्य है।

UNIT–I (इकाई–I)

1. Kindly discuss the various sources of Indian Constitution.
भारतीय संविधान के विभिन्न स्रोतों की विवेचना कीजिए।

2. What is the Importance and relevance of Preamble ?
प्रस्तावना का महत्त्व और प्रासंगिकता क्या है ?

UNIT–II (इकाई–II)

3. What is the procedure of election of President of India ? Discuss in detail.
भारत के राष्ट्रपति के चुनाव की प्रक्रिया का विस्तार से वर्णन कीजिए।

4. Explain the powers and functions of Prime Minister.
प्रधानमंत्री के अधिकार और कार्यों की व्याख्या कीजिए।

UNIT–III (इकाई–III)

5. Write a note on the composition of Parliament.
संसद की संरचना पर एक टिप्पणी लिखिए।

6. What are the main features of Panchayati Raj System ?
पंचायती राज प्रणाली की मुख्य विशेषताएं क्या हैं ?

UNIT–IV (इकाई–IV)

7. Write a note on structure and position of Supreme Court of India.
भारत के सर्वोच्च न्यायालय की संरचना और स्थिति पर एक टिप्पणी लिखिए।

8. What is the importance and relevance of Judicial Review ?
न्यायिक समीक्षा का महत्त्व और प्रासंगिकता क्या है ?

UNIT–V (इकाई–V)

Compulsory Question

9. Objective type questions.
वस्तुनिष्ठ प्रश्न।

(a) When was the first meeting of Constituent Assembly of India held ?

(i) 09 Dec., 1946 (ii) 09 March, 1946

(iii) 15 Aug., 1947 (iv) 16 Aug., 1947.

भारत की संविधान सभा की पहली मीटिंग कब हुई थी ?

(i) 9 दिसम्बर, 1946 को (ii) 9 मार्च, 1946 को

(iii) 15 अगस्त, 1947 को (iv) 16 अगस्त, 1947 को।

(b) Who was the president of Constituent Assembly of India ?

(i) C. Rajgopalachari

(ii) Dr. Rajender Prashad

(iii) Pt. Jawaharlal Nehru

(iv) Sardar Vallabhbhai Patel.

भारत की संविधान सभा के अध्यक्ष कौन थे ?

(i) सी. राजगोपालाचारी

(ii) डॉ. राजेन्द्र प्रसाद

(iii) पं. जवाहर लाल नेहरू

(iv) सरदार बल्लभभाई पटेल।

(c) How many Fundamental Rights were granted in Original Constitution of India ?

(i) 05 (ii) 06

(iii) 07 (iv) 08.

भारत के मूल संविधान में कितने मूलभूत अधिकार दिए गए थे ?

(i) 05 (ii) 06

(iii) 07 (iv) 08.

(d) How many directive principles of state policy are granted in Indian Constitution ?

(i) 10 (ii) 11

(iii) 12 (iv) 15.

भारतीय संविधान में राज्य नीति के कितने निर्देशक सिद्धान्त स्वीकार किए गए हैं ?

(i) 10 (ii) 11

(iii) 12 (iv) 15.

(e) Who is the leader of Lok Sabha ?

(i) Mr. Rajnath Singh (ii) Mr. Narender Modi

(iii) Mr. Jayanti Natrajan (iv) Mr. Venkaiah Naidu.

लोकसभा के अधिपति कौन हैं ?

(i) श्री राजनाथ सिंह (ii) श्री नरेन्द्र मोदी

(iii) श्री जयन्ती नटराजन (iv) श्री वेंकैया नायडू।

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725

ECONOMICS

(Micro Economics)

Paper–I

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1 and 2 are compulsory. Attempt the remaining 3 questions selecting *one* question from any three of the four given units.

नोट : कुल **पाँच** प्रश्न करें। प्रश्न 1 तथा 2 अनिवार्य हैं। बाकी 3 प्रश्नों के लिए दी गयी चार इकाइयों में से किन्हीं 3 में से **एक-एक** प्रश्न चुनें।

1. Compulsory Question (अनिवार्य प्रश्न)

A cotton producer is ready to supply 100 bales of cotton at Rs. 20 per bale and 200 bales at Rs. 30 per bale and 300 at Rs. 40 per bale. But if price falls to Rs. 10 per bale he will not supply any quantity.

Answer the following questions :

(a) Name the Law of economics in this example.

(b) Draw Supply schedule and Supply curve.

(c) Estimate elasticity when price changes from Rs. 20 to Rs. 40.

(d) What is the slope of Supply curve ? (4×4=16)

एक कपास उत्पादक 20 रु. प्रति गांठ पर 100 गांठ, 30 रु. प्रति गांठ पर 200 गांठ तथा 40 रु. प्रति गांठ पर 300 गांठों की पूर्ति करता है। परन्तु वह 10 रु. प्रति गांठ से कम कीमत पर पूर्ति का इच्छुक नहीं है।

निम्न प्रश्नों का उत्तर दें :

(क) यह अर्थशास्त्र का कौन-सा नियम है?

(ख) पूर्ति अनुसूची तथा पूर्ति वक्र बनाएं।

(ग) जब कीमत 20 रु. से 40 रु. होती है तो पूर्ति की लोच का आकलन करें।

(घ) पूर्ति वक्र का ढलान क्या है?

2. Compulsory Question (अनिवार्य प्रश्न)

Choose the correct answer.

सही उत्तर का चुनाव करें।

(A) (i) Who gave Material welfare definition of Economics ?

(a) Smith

(b) Peterson

(c) Marshall

(d) Mill.

अर्थशास्त्र की भौतिक कल्याण संबंधी परिभाषा किसने दी है?

(अ) स्मिथ

(ब) पीटरसन

(स) मार्शल

(द) मिल।

(ii) Under Socialism, economic decisions are taken by

(a) Government

(b) Market

(c) Both the above

(d) None of the above.

समाजवाद के अन्तर्गत आर्थिक निर्णय लिए जाते हैं

(अ) सरकार द्वारा

(ब) बाजार द्वारा

(स) उपरोक्त दोनों के द्वारा

(द) उपरोक्त में से किन्हीं के भी द्वारा नहीं।

(iii) With increase in income, demand for inferior goods

(a) rises

(b) falls

(c) remains stable

(d) None of the above.

आय के बढ़ने के साथ घटिया वस्तुओं की मांग

(अ) बढ़ती है

(ब) घटती है

(स) स्थिर रहती है

(द) उपरोक्त में से कोई नहीं।

(iv) Which is *correct* ?

(a) $MV = \frac{TV}{Q}$

(b) $MV = \Sigma TV$

(c) $MV = TV_{n-1} - TV_n$

(d) $MV = TV_n - TV_{n-1}$.

कौन-सा सही है?

(अ) $MV = \frac{TV}{Q}$

(ब) $MV = \Sigma TV$

(स) $MV = TV_{n-1} - TV_n$

(द) $MV = TV_n - TV_{n-1}$.

(v) Which is external economy ?

(a) Managerial

(b) Technical

(c) Information

(d) None. (5×1=5)

इनमें से कौन-सी बाहरी बचत है?

(अ) प्रबन्धकीय

(ब) तकनीकी

(स) सूचना

(द) कोई नहीं।

(B) Match the following :

1. Perishable goods	(a) Planning curve
2. LAC	(b) Inelastic supply
3. Consumer equilibrium	(c) P = MV
4. Hicks	(d) Increase in tax
5. Decrease in Consumer surplus	(e) Indifference curve.

(5×1=5)

सही मिलान करें

1. नाशवान वस्तुएं	(अ) योजना वक्र
2. LAC	(ब) बेलोचदार पूर्ति
3. उपभोक्ता संतुलन	(स) P = MV
4. हिक्स	(द) कर में वृद्धि
5. उपभोक्ता की बचत में कमी	(य) तटस्थता वक्र

(C) Define the following :

(a) Increase in Demand.

(b) Elasticity of supply.

(c) Income effect. (3×2=6)

निम्न की व्याख्या करें :

(क) मांग में वृद्धि।

(ख) पूर्ति की लोच।

(ग) आय प्रभाव।

UNIT–I (इकाई–I)

3. Discuss the scope of Economics and its limitations. 16

अर्थशास्त्र के क्षेत्र तथा सीमाओं का वर्णन करें।

4. Define Price elasticity of Demand. How is it measured ? 16

मांग की कीमत लोच की व्याख्या करें। इसे कैसे मापते हैं?

UNIT–II (इकाई–II)

5. What is Consumer equilibrium ? Discuss it with the help of Indifference curves. 16

उपभोक्ता संतुलन क्या है? तटस्थता वक्रों से इसकी व्याख्या करें।

6. Explain Consumer surplus. How is it measured ? 16

उपभोक्ता बचत की व्याख्या करें। इसे कैसे मापते हैं?

UNIT–III (इकाई–III)

7. Discuss Law of Variable proportions of production. 16

उत्पादन के घटते-बढ़ते अनुपात के नियम की व्याख्या करें।

8. What are Isoquants ? Discuss their properties. 16

समउत्पाद वक्र क्या हैं? उनकी विशेषताएं बताइए।

UNIT–IV (इकाई–IV)

9. Discuss the relation between various Short run cost curves according to traditional theory.

परम्परावादी सिद्धांत के अनुसार विभिन्न अल्पकालीन लागतों के संबंध को दर्शाएं।

10. Define and discuss relations between various revenue curves.

विभिन्न आगम वक्रों की परिभाषा दें और उनके संबंध को दर्शाएं।

तालिका व रेखाचित्रों की सहायता से अल्पकालीन कुल लागत, औसत लागत व सीमान्त लागत की अवधारणाओं का वर्णन कीजिए। यह भी स्पष्ट कीजिए कि AC वक्र U-आकार का क्यों होता है?

9. Explain the concepts of Total revenue, Average revenue and Marginal revenue. Also explain the relationship between Total revenue and Marginal revenue. 16

कुल आय, औसत आय तथा सीमान्त आय की अवधारणाओं की व्याख्या कीजिए। कुल तथा सीमान्त आय में सम्बन्ध का भी वर्णन कीजिए।

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ECONOMICS
(Micro Economics–I)
Paper–I

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question each from any of the three units and the *fourth* questiton may be attempted from any unit.

नोट : कुल **पाँच** प्रश्न कीजिए। प्रश्न संख्या 1 अनिवार्य है। किन्हीं तीन इकाइयों से **एक-एक** प्रश्न का चुनाव कीजिए तथा **चौथा** प्रश्न किसी भी इकाई से किया जा सकता है।

Compulsory Question (अनिवार्य प्रश्न)

1. Write brief answers of the following :
   (a) What is difference between Micro and Macro Economics ?
   (b) What is Price elasticity of demand ?
   (c) Explain the Law of Diminishing marginal utility.
   (d) Explain the Law of Supply.
   (e) Explain the difference between money cost and real cost.
   (f) What is Break-even point ?

   Fill in the blanks with appropriate words.

   (g) Demand for necessary goods is ..... elastic. (less/more)

(h) When TR is maximum, MR will be .....
(Zero/positive/negative)
(8×2=16)

निम्नलिखित के संक्षिप्त उत्तर दीजिए :

(क) व्यष्टि व समष्टि अर्थशास्त्र में क्या अन्तर है?

(ख) मांग की कीमत लोच क्या होती है?

(ग) घटती सीमान्त उपयोगिता के नियम का वर्णन कीजिए।

(घ) आपूर्ति के नियम का वर्णन कीजिए।

(ङ) मौद्रिक लागत तथा वास्तविक लागत में अन्तर स्पष्ट कीजिए।

(च) सम-विच्छेद बिन्दु क्या है?

उपयुक्त शब्द द्वारा रिक्त स्थान की पूर्ति कीजिए :

(छ) आवश्यक वस्तुओं की मांग ..... लोचदार होती है।
(कम/अधिक)।

(ज) जब TR अधिकतम होती है तो MR ..... होती है।
(शून्य/धनात्मक/ऋणात्मक)

UNIT–I (इकाई–I)

2. What is Mixed Economy ? Explain the features, merits and demerits of Mixed economy. 16
मिश्रित अर्थव्यवस्था से क्या अभिप्राय है? मिश्रित अर्थव्यवस्था की विशेषताओं, गुण व दोषों का वर्णन कीजिए।

3. Explain the Law of Demand. Why is it negatively sloped ? Explain the exceptions of the Law of demand. 16

मांग के नियम का वर्णन कीजिए। इसका ढलान ऋणात्मक क्यों होता है? मांग के नियम के अपवाद कौन-कौन से हैं?

UNIT–II (इकाई–II)

4. What are Indifference curves ? Explain the properties of Indifference curves. 16
तटस्थता वक्र क्या होते हैं? इनकी विशेषताओं का वर्णन कीजिए।

5. What is Consumer's surplus ? How can it be measured ? 16
उपभोक्ता बचत से क्या अभिप्राय है? इसे कैसे मापा जा सकता है?

UNIT–III (इकाई–III)

6. What are Returns to scale ? Explain with the help of table and diagrams. What are the causes of their applicability ? 16
पैमाने के प्रतिफल क्या होते हैं, तालिका व रेखाचित्र द्वारा व्याख्या कीजिए। इनके लागू होने के क्या कारण हैं?

7. What are Internal and External economies and diseconomies of scale ? Explain with the help of examples. 16
आन्तरिक व बाहरी बचतें व हानियाँ क्या होती हैं? उदाहरण देकर समझाइए।

UNIT–IV (इकाई–IV)

8. Explain with the help of tables and diagrams the concepts of Total cost, Average cost and Marginal cost in short-run. Also explain why AC is U-shaped. 16

Roll No. ..... Total Pages : 3

GSE/D-17 **734**

MUSIC (VOCAL)

(Theory)

Paper–I

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

नोट : प्रत्येक इकाई से कम से कम **एक** प्रश्न का चयन करते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

UNIT–I (इकाई-I)

1. Write the notation of Rag Alhaiya Bilawal in Drut Khyal with two Alaps.

राग अल्हैया बिलावल की द्रुत ख्याल की स्वरलिपि दो आलापों सहित लिखें। 8

2. Write Ektal and Teental with Dugun.

एकताल व तीनताल को दुगुन सहित लिखिए। 8

3. Write the detailed description of Rag Yaman and Bupali.

राग यमन व भूपाली का विस्तार से परिचय लिखें। 8

UNIT–II (इकाई–II)

4. Write the definitions of the following :

(a) Vivadi.

(b) Saptak.

(c) Tali.

(d) Khali.

निम्नलिखित की परिभाषाएँ लिखें :

(क) विवादी।

(ख) सप्तक।

(ग) ताली।

(घ) खाली। (2+2+2+2=8)

5. Write in detail about Sangeet.

संगीत के बारे में विस्तार से बताएं। 8

6. Write the history of Indian Music from Vedic period to 12th century.

वैदिक काल से 12वीं शताब्दी तक भारतीय संगीत का इतिहास लिखें। 8

UNIT–III (इकाई–III)

7. Write the relationship of Folk music and Classical music.

लोकसंगीत व शास्त्रीय संगीत का आपस में क्या सम्बन्ध है, लिखें। 8

8. Write the life-history of Pt. Vishnu Digambar Paluskar Ji and his contribution to music.

प. विष्णु दिगम्बर पलुस्कर जी का जीवन-परिचय और उनका संगीत में क्या योगदान है, लिखें। 8

9. Write in detail about Rag.

राग के बारे में विस्तार से लिखें। 8

10. Write about Nad and Shruti.

नाद व श्रुति के बारे में लिखें। 8

Roll No. .....

Total Pages : 3

GSE/D-17

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MUSIC

(Instrumental)

Paper–I

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

नोट : प्रत्येक इकाई में से कम से कम **एक** प्रश्न चुनते हुए कुल **पाँच** प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

UNIT–I (इकाई–I)

1. Write the notation of any Maseetkhani Gat of your syllabus with two Toras. 8

अपने पाठ्यक्रम के किसी एक राग की मसीतखानी गत की स्वरलिपि दो तोड़ों सहित लिखिए।

2. Describe Raga Yaman with its Aroh, Avroh and Pakar. 8

राग 'यमन' का वर्णन करते हुए उसके आरोह, अवरोह तथा पकड़ सहित लिखिए।

3. Write the notation of any Razakhani Gat of your syllabus with two Toras. 8

अपने पाठ्यक्रम के किसी एक राग की रजाखानी गत की स्वरलिपि दो तोड़ों सहित लिखिए।

4. Write the detail about Raga 'Bupali' and 'Alhaiya-Bilawal'. (4+4=8)

राग 'भूपाली' तथा राग 'अल्हैया बिलावल' के विषय में विस्तारपूर्वक लिखिए।

UNIT–II (इकाई–II)

5. Discuss the structure of Sitar and its techniques. 8

सितार की बनावट तथा उसके बजाने की तकनीक के विषय में विस्तार से लिखिए।

6. Write short notes on any *two* of the following :

(a) Swar.

(b) Raga.

(c) Sapak.

(d) Thaat. (4+4=8)

निम्नलिखित में से किन्हीं **दो** पर टिप्पणी लिखिए:

(क) स्वर।

(ख) राग।

(ग) सप्तक।

(घ) थाट।

7. Write in detail about 'Gat' and 'Shruti'. (4+4=8)

'गत' तथा 'श्रुति' के विषय में विस्तारपूर्वक लिखिए।

UNIT–III (इकाई–III)

8. Write down the contribution of Ustad Vilayat Khan in the field of Music. 8

'उस्ताद विलायत खाँ' का संगीत के क्षेत्र में योगदान लिखिए।

9. Write the notation of 'Teentaal' and 'Ektal' with Ekgun and Dugun Layakaries. (4+4=8)

'तीनताल' तथा 'एकताल' को उनकी विशेषताओं सहित एकगुण तथा दुगुण लयकारियों में लिपिबद्ध कीजिए।

10. Differentiate between Folk and Classical music. 8

लोक संगीत तथा शास्त्रीय संगीत में अन्तर स्पष्ट कीजिए।

Roll No. .....

Total Pages : 3

GSE/D-17

751

OFFICE MANAGEMENT

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt any *five* questions. All questions carry equal marks.

नोट : कोई **पाँच** प्रश्न करें। सभी प्रश्नों के अंक समान हैं।

1. What is Office Management ? Explain the importance of office management in a business.
कार्यालय प्रबन्ध क्या है? एक व्यवसाय में कार्यालय प्रबन्ध के महत्त्व का वर्णन कीजिए।

2. Describe the functions of a modern office. Bring out the important departments of a modern office.
आधुनिक कार्यालय के कार्यों का उल्लेख कीजिए। आधुनिक कार्यालय के महत्त्वपूर्ण विभागों को बताइए।

3. Define Authority and Responsibility. Also explain the Centralisation *vs.* Decentralisation of office services.
अधिकार एवं दायित्वों को परिभाषित कीजिए। कार्यालय सेवाओं के केन्द्रीकरण तथा विकेन्द्रीकरण का तुलनात्मक मूल्यांकन करें।

4. Describe the authority and responsibilities of an Office Manager.

एक कार्यालय प्रबन्धक के अधिकारों एवं दायित्वों का वर्णन कीजिए।

5. What is the status of an Office Manager ? Discuss the qualifications of the Office Manager.
कार्यालय प्रबन्धन का क्या स्थान है? कार्यालय प्रबन्धक की योग्यताओं का वर्णन कीजिए।

6. Discuss the importance of Office accommodation for a business.
एक व्यवसाय के लिए कार्यालय स्थल का क्या महत्त्व है, वर्णन करें।

7. Discuss the main factors involved in Office layout.
कार्यालय विन्यास में शामिल मुख्य तत्त्वों का वर्णन करें।

8. The efficiency of office employees is directly or indirectly affected by the conditions under which they are required to work. Elucidate this statement.
कार्यालय कर्मचारियों की क्षमता उन कार्य-स्थितियों से प्रत्यक्ष या अप्रत्यक्ष रूप से प्रभावित होती है जिनके अन्तर्गत उन्हें कार्य करना होता है। इस कथन की व्याख्या करें।

9. State and explain the merits and demerits of Centralised and Decentralised correspondence in modern office.
एक आधुनिक कार्यालय में केन्द्रीकृत तथा विकेन्द्रीकृत पत्राचार के लाभ एवं हानियों को बताइए।

10. "Communication is a very important function of any business." Discuss the characteristics of a good system of internal communication.
"संचार किसी व्यवसाय का एक अति महत्त्वपूर्ण कार्य है।" आन्तरिक संचार के एक उत्तम तरीके की विशेषताओं की व्याख्या कीजिए।

SECTION–IV

8. (a) Solve the equation $x^3 - 3x^2 + 12x + 16 = 0$ by Cardon's method. 2½

(b) Apply Descarte's method to solve the equation $x^4 - 10x^3 + 35x^2 - 50x + 24 = 0$. 2½

9. (a) Solve the equation $x^4 - 4x^3 - 4x^2 - 24x + 15 = 0$ by Ferrari's method. 2½

(b) Show that the equation $x^7 + x^4 + 8x + k = 0$ has at least four imaginary roots for all values of k. 2½

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GSE/D-17 **760**

ALGEBRA

Paper : BM-111

Time : Three Hours] [Maximum Marks : 27

Note : Attempt *five* questions in all. Q. No. 1 is compulsory. Select *one* question from each section. All questions carry equal marks.

Compulsory Question

1. (a) If $|A| \neq 0$, then adjoint of A is non-singular. Prove it. 1½

(b) If α is an eigen value of non-singular matrix A, then prove that $\frac{|A|}{\alpha}$ is an eigen value of adj A. 1½

(c) Show that $x^5 + 5x^3 + 3x - 10 = 0$ has at least two imaginary roots. 1½

(d) Discuss the nature of the roots of the equation $x^3 + 2x + 1 = 0$. 1½

(e) Find the rank of the matrix

$$A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & 3 & 0 \\ 0 & 0 & 4 \end{bmatrix}.$$ 1

SECTION–I

2. (a) The rank of the product of two matrices cannot exceed the rank of either matrix. Prove it, i.e.,

$P(AB) \leq P(A)$ and $P(AB) \leq P(B)$. 2½

(b) Find the non-singular matrices P and Q such that PAQ is in normal form where $A = \begin{bmatrix} 2 & 2 & -6 \\ -1 & 2 & 2 \end{bmatrix}$. 2½

3. (a) Verify Cayley-Hamilton theorem for the matrix

$A = \begin{bmatrix} 2 & 1 & 2 \\ 5 & 3 & 3 \\ -1 & 0 & -2 \end{bmatrix}$ and compute A^{-1}. 2½

(b) Prove that any two characteristic vectors corresponding to two distinct characteristic matrix are orthogonal. 2½

SECTION–II

4. (a) For what value of λ, does the system $\begin{bmatrix} -1 & 2 & 1 \\ 3 & -1 & 2 \\ 0 & 1 & \lambda \end{bmatrix} \begin{bmatrix} x \\ y \\ z \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$ has (i) no solution, (ii) unique solution ? 2½

(b) If A is a real skew-symmetric martix such that $A^2 + I = 0$, show that A is orthogonal and is of even order. 2½

5. (a) Reduce the bilinear form

$x_1y_1 + x_1y_3 - x_2y_1 + x_2y_2 + x_3y_3$

to the canonical form. Also find the equations of transformations. 2½

(b) Prove that $9x^2 + y^2 + 4z^2 + 6xy - 12xz - 4yz$ is positive semi-definite. 2½

SECTION–III

6. (a) Solve the equation

$4x^4 + 8x^3 + 13x^2 + 2x + 3 = 0$,

it being given that the sum of two of its roots is zero. 2½

(b) Solve the equation

$x^4 - 9x^2 + 4x + 12 = 0$,

given that it has a multiple root. 2½

7. (a) Solve the equation

$15x^4 - 8x^3 - 14x^2 + 8x - 1 = 0$

given that roots are in H.P. 2½

(b) If α, β, γ are the roots of the equation

$x^3 + px^2 + qx + r = 0$,

find the equation whose roots are $\alpha^2 - \beta\gamma$, $\beta^2 - \gamma\alpha$ and $\gamma^2 - \alpha\beta$. 2½

(b) The loop of the curve $2ay^2 = x(x - a)^2$ revolves about the straight line $y = a$. Find the volume of the solid generated. 2½

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GSE/D-17 **761**

CALCULUS

Paper : BM-112

Time : Three Hours] [Maximum Marks : 26

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question from each section.

Compulsory Question

1. (a) Evaluate $\lim_{n\to\infty} \frac{\Sigma n^2}{n^3}$. 1

(b) If $y = ae^{mx} + be^{-mx}$, prove that $y_2 - m^2y = 0$. 1½

(c) If $U_n = \int (\log x)^n \, dx$, show that

$$U_n + nU_{n-1} = x\,(\log x)^n.$$ 1½

(d) Define Curvature of a circle. 1

(e) Find the area bounded by $y^2 = 4ax$ and its latus rectum. 1

SECTION–I

2. (a) Show that the function defined by $f(x) = |x| + |x-1|$ is continuous but not derivable at $x = 041$. 3

(b) If $y = e^{m\cos^{-1}x}$, prove that

$$(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - (n^2+m^2)y_n = 0.$$ 2

3. (a) If $f(x) = x^3 + 2x^2 - 5x + 11$, find the value of $f\left(\frac{9}{10}\right)$ with the help of Taylor's series for $f(x + h)$. 2½

(b) Prove that

$$\log \sin x = \log \sin 2 + (x-2)\cot 2 - \frac{(x-2)^2}{2}\operatorname{cosec}^2 2 + \frac{(x-2)^3}{3}\cot 2 \operatorname{cosec}^2 2 + \ldots\ldots \infty .$$

2½

SECTION–II

4. (a) Find the asymptotes of the curve $r \cos \theta = a \sin^2 \theta$. 2½

(b) If ρ_1, ρ_2 be radii of curvature at the extremities of a pair of semi-conjugate diameters of an ellipse, prove that

$$\left[(\rho_1)^{2/3} + (\rho_2)^{2/3}\right](ab)^{2/3} = a^2 + b^2 . \quad 2½$$

5. (a) Show that the chord of curvature through the pole of the cardioid $r = a(1 + \cos \theta)$ is $\frac{4}{3}r$. 2½

(b) Find the points of inflexion on the curve

$x^2y = a^2(x - y)$. 2½

SECTION–III

6. (a) Trace the curve $r = a(1 - \sin \theta)$. 2½

(b) If $I_{m,n} = \int_0^{\frac{\pi}{2}} \cos^m x \sin nx \, dx$, prove that

$$I_{m,n} = \frac{1}{m+n} + \frac{m}{m+n} I_{m-1,\, n-1}.$$

Hence evaluate $I_{5,3}$. 2½

7. (a) Connect $\int \sin^m x \cos^n x \, dx$ with $\int \sin^m x \cos^{n-2} x \, dx$. 2½

(b) Find the length of the arc of the parabola $\frac{2a}{r} = 1 + \cos \theta$ cutt off by its latus rectum. 2½

SECTION–IV

8. (a) Find the area common to the circle $x^2 + y^2 = 4$ and the ellipse $x^2 + 4y^2 = 9$. 2½

(b) Find the area of a loop of the curve $r^2 = a^2 \cos 2\theta$ and hence find its total area. 2½

9. (a) Find the volume of the solid formed by the revolution of one arch of the cycloid

$x = a(\theta - \sin \theta)$, $y = a(1 - \cos \theta)$

about its base. 2½

Roll No. .....

Total Pages : 3

GSE/D-17

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SOLID GEOMETRY

Paper : BM–113

Time : Three Hours]

[Maximum Marks : 27

Note : Attempt *five* questions in all. Select *one* question each from Unit–I to Unit–IV. Question No. 9 (Unit–V) is compulsory.

UNIT–I

1. Show that the conic $8x^2 - 24xy + 15y^2 + 48x - 48y = 0$ represents a hyperbola. Find its eccentricity, lengths, equations of axes and foci, and trace it. 5

2. (a) Prove that the conics $x^2 - y^2 - 4x + 2y + 2 = 0$ and $x^2 + 3y^2 - 4x - 6y + 4 = 0$ are confocal. 2½

(b) Find the polar equation of a conic with forms as pole. 2½

UNIT–II

3. (a) Find the equation of the cone whose vertex is (–1, 1, 2) and whose guiding curve is $3x^2 - y^2 = 1$, $z = 0$. 2½

(b) Find the equation of sphere passing through origin and meeting the axes at A, B and C points. 2½

4. (a) Find the equations of a right circular cylinder of radius 2 whose axis as the line $\frac{x-1}{2}=\frac{y-2}{1}=\frac{z-3}{2}$ 2½

(b) Find the equation of the sphere, through the circle $x^2 + y^2 + z^2 = 1$, $2x + 4y + 5z = 6$ and touching the plane $z = 0$. 2½

UNIT–III

5. (a) Find the equation of the plane which cuts the conicoid $3x^2 + 2y^2 - 15z^2 = 4$ in a conic with centre (–2, 3, –1).

(b) Find the equations of polar of the lines

$\frac{x-1}{5} = \frac{y-3}{7} = \frac{z+5}{2}$ w.r.t. the conicoid $x^2 + 3y^2 - 7z^2 - 21 = 0$ in symmetrical form. 2½+2½

6. (a) Show that the plane $x + 2y + 3z = 2$ touches the conicoid $x^2 - 2y^2 + 3z^2 = 2$, and find the point of contract. 2½

(b) Prove that six normals can be drawn from a given point to the ellipsoid. 2½

UNIT–IV

7. Prove that the surface represented by $4x^2 - y^2 - z^2 + 2yz - 8x - 4y + 8z - 2 = 0$ is a hyperbolic paraboloid. Also find its vertex and the equation to the axis. 5

8. (a) Find the real central circular section of the ellipsoid $x^2 + 2y^2 + 6z^2 = 8$. 2½

(b) Find the equations to the generating lines of the hyperboloid $\frac{x^2}{4}+\frac{y^2}{9}-\frac{z^2}{16}=1$ which pass through the point $\left(2, -1, \frac{4}{3}\right)$. 2½

UNIT–V

(Compulsory Question)

9. Answer all the following in short:

(a) Define Ellipsoid of revolution.

(b) Define Cone, its vertex and generator.

(c) Define limiting points of a co-axal system.

(d) Define Confocal conics.

(e) Define Conjugate diameters.

(f) Define Pole and Polar of a conic.

(g) Find the centre and radius of the sphere $2x^2 + 2y^2 + 2z^2 - 2x + 4y + 2z - 5 = 0$. (1×7=7)

Roll No. .....

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GSE/D-17

POLITICAL SCIENCE

(Indian Constitution)

Paper – I

Opt. (i)

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *five* questions in all, selecting *one* question from each unit. Question No. 1 is compulsory.

नोट : प्रत्येक इकाई से **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 अनिवार्य है।

Compulsory Question

(अनिवार्य प्रश्न)

1. (i) Write down the Preamble of Indian Constitution.
भारतीय संविधान की प्रस्तावना का उल्लेख करें।

(ii) Write the *two* fundamental duties.
दो मौलिक कर्तव्यों का उल्लेख करें।

(iii) Describe the *two* functions of Prime Minister.
प्रधानमंत्री के **दो** कार्य बताओ।

(iv) Write a short note on Article 352.
अनुच्छेद 352 पर एक संक्षिप्त नोट लिखें।

(v) What are the functions of speaker of Lok Sabha ?
लोक सभा अध्यक्ष के क्या कार्य होते हैं ?

(vi) In which Article there is a provision of Amendment procedure in Indian Constitution ?

भारतीय संविधान में संशोधन प्रक्रिया का उल्लेख किस अनुच्छेद में है ?

(vii) What is Judicial Review.

न्यायिक पुनर्निरीक्षण से आप क्या समझते हो ?

(viii) Who is the Chief Justice of India ? (2×8=16)

भारत के मुख्य न्यायाधीश कौन है ?

UNIT–I (इकाई–I)

2. Indian Constitution is a Bag of Borrowing. Do you agree with this statement ? Explain. 16

भारतीय संविधान एक उधार लिया गया थैला है। क्या आप इस कथन से सहमत हैं। वर्णन करें।

3. Critically examine the Fundamental Rights under the Indian Constitution. 16

भारतीय संविधान में अंकित मौलिक अधिकारों की आलोचनात्मक व्याख्या करें।

UNIT–II (इकाई–II)

4. Describe the power, functions and position of the President of India. 16

भारत के राष्ट्रपति की शक्तियों, कार्यों तथा स्थिति का वर्णन करें।

5. Explain the Power, functions of the Chief Minister of a state. 16

राज्य के मुख्यमंत्री के कार्यों एवं शक्तियों का वर्णन करें।

UNIT–III (इकाई–III)

6. Discuss the composition, power and functions of Lok Sabha. 16

लोक सभा की रचना, कार्यों एवं शक्तियों की व्याख्या करें।

7. Describe the main provision of the 73rd Amendment of Indian Constitution. 16

73वें संवैधानिक संशोधन की मुख्य विशेषताओं का वर्णन करें।

UNIT–IV (इकाई–IV)

8. Describe the Organisation and Jurisdiction of Supreme Court of India. 16

भारतीय सर्वोच्च न्यायालय के संगठन एवं क्षेत्राधिकार का वर्णन करें।

9. Give Arguments For and Against Judicial Activism. 16

न्यायिक सक्रियता के पक्ष तथा विपक्ष में तर्क दीजिए।

Roll No. .....

Total Pages : 3

GSE/D-17

784

CALCULUS

Paper : BM-112

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question from each section.

Compulsory Question

1. (a) Evaluate $\lim_{x \to 0} \frac{x}{|x|}$. 2

(b) If $y = ae^{mx} + be^{-mx}$, prove that $y_2 - m^2 y = 0$. 2

(c) Define Asymptotes with example. 1

(d) What is a Singular point ? 1

(e) Find the length of a loop of the curve $r = a(\theta^2 - 1)$. 2

SECTION–I

2. (a) Discuss the continuity and differentiability of the function $f(x) = |x - 1| + |x - 2|$ in the interval [0, 3]. 4

(b) If $y = \left[\log\left(x + \sqrt{1 + x^2}\right)\right]^2$, prove that

$$(1 + x^2) y_{n+2} + (2n + 1) x y_{n+1} + n^2 y_n = 0.$$ 4

3. (a) Expand $\sin x$ and $\cos x$ in powers of x, and hence find $\cos 18°$ upto four decimal places. 4

(b) Find the approximate change in the value of $f(x) = 5x^3 - 3x^2 + 7x - 8$, when x changes from 3 to 3.001. 4

SECTION–II

4. (a) Find all the asymptotes of the curve
$(x + y)^2 (x + y + 2) - x - 9y + 2 = 0$. 4

(b) Find the asymptotes of the curve
$r^2 = a^2(\sec^2 \theta + \operatorname{cosec}^2 \theta)$. 4

5. (a) Show that in an ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$, the radius of curvature at the end of the major axis is equal to the semi-latus rectum of the ellipse. 4

(b) Show that every point, in which the sine curve $y = c \sin \frac{x}{c}$ meets the axis of x, is a point of inflexion. 4

SECTION–III

6. (a) Trace the curve $x = a(\theta + \sin \theta)$, $y = a(1 - \cos \theta)$. 4

(b) Obtain a reduction formula for $\int x^n \cos x \, dx$, and hence evaluate $\int x^3 \cos x \, dx$. 4

7. (a) Find that the loop of the curve $x = t^2$, $y = t - \frac{1}{3}t^3$ is of length $4\sqrt{3}$. 4

(b) Find the intrinsic equation of the cardioid
$r = a(1 - \cos \theta)$. 4

SECTION–IV

8. (a) Trace the curve $ay^2 = x^2(a - x)$, and show that the area of the loop is $\frac{8}{15}a^2$. 4

(b) Find the area common to the circle $r = a$ and the cardioid $r = a(1 + \cos \theta)$. 4

9. (a) The circle $x^2 + y^2 = a^2$ is revolved about the x-axis. Find the volume of the sphere so formed. 4

(b) Find the surface of the solid generated by the revolution of the astroid $x^{2/3} + y^{2/3} = a^{2/3}$ about the x-axis. 4

Roll No. ..... Total Pages : 3

GSE/D-17 **785**

SOLID GEOMETRY

Paper : BM-113

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all. Select *one* question each from Unit-I to Unit-IV. Q. No. 9 (Unit-V) is compulsory.

UNIT–I

1. Show that conic $9x^2 + 24xy + 16y^2 - 2x + 14y + 1 = 0$ represents parabola. Find the coordinates of its vertex and focus, equation of axis and its direction. Also trace it. 7

2. (a) Prove that the conics $x^2 - y^2 - 4x + 2y + 2 = 0$ and $x^2 + 3y^2 - 4x - 6y + 4 = 0$ are confocal. 3½

(b) Find he polar equation of conic with focus as a pole. 3½

UNIT–II

3. (a) A sphere of a constant radius r passing through the origin meets the axis in A, B, C. Show that the locus of the foot of the perpendicular from origin to the plane ABC is given by

$$(x^2 + y^2 + z^2)\,(x^{-2} + y^{-2} + z^{-2}) = 4r^2.$$ 3½

(b) Find the equation of the right circular cylinder whose guiding circle is $x^2 + y^2 + z^2 = 9$, $x - y + z = 3$. 3½

4. (a) Find the equation of the right circular cone, whose vertex is (2, –3, 5), axis makes equal angle with the axes and which passes through the point (1, –2, 3). 3½

(b) Find the equation of the sphere which touches the plane $3x + 2y - z + 2 = 0$ at the point (1, –2, 1) and cuts orthogonally the sphere $x^2 + y^2 + z^2 - 4x + 6y + 4 = 0$. 3½

UNIT–III

5. (a) Find the equations of the tangent planes to $2x^2 - 6y^2 + 3z^2 = 5$ which pass through the line $x + 9y - 3z = 0,\ 3x - 3y + 6z - 5 = 0$. 4

(b) Find the centre of the conic given by the equation $2x - 2y - 5z + 5 = 0,\ 3x^2 + 2y^2 - 15z^2 = 4$. 4

6. (a) Prove that the sum of the squares of the reciprocals of any three mutually perpendicular diameters of an ellipsoid is constant. 4

(b) Find the equations of the polar of the line $\frac{x-1}{5} = \frac{y-3}{7} = \frac{z+5}{2}$ with respect to the conicoid $x^2 + 3y^2 - 7z^2 - 21 = 0$ in the symmetrical form. 4

UNIT–IV

7. (a) Show that the plane $8x - 6y - z = 5$ touches the paraboloid $3x^2 - 2y^2 = 6z$. Also find the point of contact. 4

(b) Find the equations to the generating lines of the hyperboloid $\frac{x^2}{4} + \frac{y^2}{9} - \frac{z^2}{16} = 1$ which pass through the point (2, 3, –4). 4

8. Reduce the equation

$11x^2 + 10y^2 + 6z^2 - 8yz + 4zx - 12xy + 72x - 72y + 36z + 150 = 0$

to the standard form and show that it represents an ellipsoid, and find the equations of the axes. 8

UNIT–V
(Compulsory Question)

9. (a) Find the asymptotes of the hyperbola

$x^2 - 4xy - 5y^2 + 6x + 42y - 63 = 0$. 2

(b) Find the centre of the conic

$5x^2 + 6xy + 5y^2 + 4x + 12y - 4 = 0$. 2

(c) Find the centre and radius of the sphere

$x^2 + y^2 + z^2 - 2x - 4y - 6z - 2 = 0$. 2

(d) Find the equations of the tangent planes to the surface $x^2 - 2y^2 + 3z^2 = 2$ which are parallel to the plane $x - 2y + 3z = 0$. 2

(e) Find the equation of plane which cuts the paraboloid $x^2 - 2y^2 = z$ in a conic with its centre at the point (2, 3/2, 4). 2

(b) Define Root mean square value of a.c. and show that peak value of a.c. is $\sqrt{2}$ times the root mean square value. 3

Roll No. ..... Total Pages : 4

GSE/D-17 **791**

PHYSICS

(Electricity, Magnetism and Electromagnetic Theory)

Paper–II

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question from each unit. Attempt all parts of a question at one place only. Use of simple non-programmable calculator is allowed.

Compulsory Question

1. Attempt any *four* parts :

(a) Distinguish between Solenoidal and Irrotational vector fields.

(b) Why is steel a better choice than soft iron for making permanent magnets ?

(c) What are Paramagnetic materials ? State Curie law for such a material.

(d) Discuss the significance of Poynting theorem. Give S.I. unit of Poynting vector.

(e) At what frequency, the capacitive reactance of a capacitor of 1 μF will be 1 kΩ ? (2×4=8)

UNIT–I

2. (a) Discuss physical significance of the gradient of a scalar function. 3

(b) State and prove Stoke's theorem. 5

3. (a) State Gauss's law in Electrostatics. Derive Coulomb's law from it. 4

(b) Derive expression for mechanical force and electrical pressure on the surface of a charged conductor. 4

UNIT–II

4. (a) Derive the relation $\vec{\nabla} \times \vec{B} = \mu_0 \vec{J}$, where $\vec{B}$ is magnetic induction and $\vec{J}$ is current density vectors. 3

(b) Describe Langevin's theory of diamagnetism, and derive relation for magnetic susceptibility of a diamagnetic material. 5

5. (a) What is Magnetic hysteresis ? Show that hysteresis loss per unit volume per cycle of magnetization in a ferromagnetic material is equal to the area under B–H curve. 4

(b) What is Curie temperature of a ferromagnetic material ? 2

(c) The magnetic susceptibility of platinum is 30×10^{-5}. Calculate its absolute and relative permeabilities. 2

UNIT–III

6. (a) Derive the following Maxwell' equations :

$$\vec{\nabla}.\vec{D} = \rho \text{ and } \vec{\nabla} \times \vec{E} = \frac{-\partial \vec{B}}{\partial t}.$$

Give their physical significance. 5

(b) Derive relation for magnetic vector potential. 3

7. (a) Derive boundary condition for electric displacement $\vec{D}$ at interface between two media. 4

(b) What is Displacement current ? Explain. 2

(c) How electric and magnetic fields are related to each other at a point in an electromagnetic wave ? 2

UNIT–IV

8. (a) Using *j*-operator, obtain relation for impedance and phase relationship between alternating e.m.f. and alternating current in a circuit containing capacitor 'C' and resistor 'R' in series. Draw the phasor diagram. 5

(b) An electric lamp runs at 80 V d.c. and consumes 10 A. It is to be used with 100 V, 50 Hz a.c. supply. Calculate the inductance of choke required. 3

9. (a) Analyse a series resonant circuit to derive relation for its resonant frequency. Draw graph showing variation of a.c. with frequency, and explain the shape of graph. Discuss the applications of this type of circuits. 5

(iii) Ionization energy of Mg (IF_2) = 2186.0 kJ mol^{-1}.

(iv) Electron affinity of Fluorine = –332.6 kJ mol^{-1}.

(v) Lattice energy of MgF_2 = –2922.5 kJ mol^{-1}.

(2½)

(b) What are Fajan rules ? (1½)

(c) Give the differences between *n*-type and *p*-type semiconductors. 2

Roll No. ..... Total Pages : 4

GSE/D-17 **792**

CHEMISTRY

(Inorganic Chemistry)

Paper–I

Time : Three Hours] [Maximum Marks : 32

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *two* questions each from Section-A and Section-B.

Compulsory Question

1. (a) How many nodes and nodal planes are present in 3 *dxy* orbitals ?

(b) Give an expression for Schrödinger wave equation.

(c) Which has smaller size between H^- and He, explain.

(d) Which has higher melting point between NaF and NaCl ?

(e) Why NaCl is soluble in water but AgCl is insoluble ?

(f) Which is more stable between NO and $N\overset{\ominus}{O}$?

(g) Explain the geometry of ICl_2^- ion on the basis of VSEPR theory.

(h) Why 4-*s* orbital is filled first than 3-*d* orbital ?

(1×8=8)

SECTION–A

2. (a) State Heisenberg's Uncertainty principle and its significance in daily life. 2

(b) What is Hund's rule of maximum multiplicity ? 2

(c) Calculate effective nuclear charge for 5*s* electron of silver (Z = 47). 2

3. (a) What is Aufbau Principle ? Give its limitations. 2

(b) Calculate the uncertainty in velocity of a cricket ball of mass 300 g, if the uncertainty in position (Δx) is of the order 1Å. ($h = 6.6 \times 10^{-34}$ Js). 2

(c) Give the values of n and l for the following subshells :

3*d*, 5*f*, 7*s*, 6*p*. 2

4. (a) What is Sanderson's scale of electronegativity ? 2

(b) Explain Ionic radii and how it is measured. 2

(c) What is Ionisation energy ? Give the factors on which it depends upon. 2

5. (a) Discuss various factors on which electronegativity depends upon. Which element has highest electronegativity ? 2

(b) What are Representative and Inner transltion elements ? 2

(c) Which has high ionisation energy between beryllium and boron, explain. 2

SECTION–B

6. (a) Explain Valence Bond theory, for the formation of hydrogen molecule with improvement. 2

(b) According to Valence Bond theory oxygen molecule is diamagnetic but Molecular orbital theory explains its paramagnetic nature, justify it. 2

(c) Explain the structure of PF_5 on the basis of hybridisation. 2

7. (a) Discuss the shape of Xenon difluoride XeF_2 on the basis of hybridisation. 2

(b) Explain the effect of electronegativity on the shapes of molecules. 2

(c) Discuss the structure of SF_4 on the basis of VSEPR theory. 2

8. (a) Explain the structure of Zinc blende. 2

(b) What is Radius ratio rule ? Explain its limitations also. 2

(c) Explain lattice defects in non-stoichiometric crystals and their consequences. 2

9. (a) Calculate the heat of formation of MgF_2 from the following data :

(i) Sublimation energy of Magnesium = 136.4 kJ mol^{-1}.

(ii) Dissociation energy of Fluorine = 158.8 kJ mol^{-1}.

(b) A five-fold axis of symmetry cannot be present in any crystal. Why ? 1

(c) A crystal intercepts the three axes of a crystal at the multiples of $\frac{3}{2}$, 2 and 1 of the axial lengths. What are the Miller indices of this plane ? 2

Roll No. ..... Total Pages : 4

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GSE/P-2

CHEMISTRY

(Physical Chemistry)

Paper–II

Time : Three Hours] [Maximum Marks : 32

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *two* questions from each section. Log tables are available.

Compulsory Question

1. (a) Distinguish between an ideal gas and a real gas. Explain graphically in terms of compressibility factor how real gases show deviation from ideal behaviour. 3

(b) At 20°C, the density of water is 0.9983 g cm^{-1} and its viscosity is 0.010087 poise. Explain how these figures indicate the water is an associated liquid. 2

(c) Why ether has higher vapour pressure than benzene at the same temperature ? 1

(d) Briefly explain the Law of constancy of interfacial angles. 2

SECTION–A

2. (a) Explain the significance of Vander Waal's constants '*a*' and '*b*'. 2

(b) Using Vander Waal's equation, derive the reduced equation of state. 4

3. (a) Define (i) Critical Temperature, (ii) Critical Pressure, and (iii) Critical Volume. Write expressions for critical constants in terms of Vander Waal's constants. 2½

(b) The reduced volume and reduced temperature of a gas are 10.2 and 0.7 respectively. What will be its pressure if its critical pressure is 42 atmosphere ? 2½

(c) Two Vander Waal's gases have the same value of '*b*' but different '*a*' values. Which of these will occupy lesser volume under identical conditions ? 1

4. (a) Briefly explain the terms (i) Root mean square velocity, (ii) Average velocity, and (iii) Most probable velocity. 3

(b) Calculate mean free path of oxygen molecules at 0°C and one atmospheric pressure, given that the molecular diameter of oxygen molecules is 2×10^{-8} cm. 3

5. (a) Calculate the temperature at which the hydrogen molecules will have an average velocity of 176400 cm s^{-1}. ($R = 8.314 \times 10^7$ ergs/degree/mol) 2

(b) Why do real gases show deviations from ideal behaviour ? 1½

(c) Defne (i) Collision number, (ii) Collision frequency, and (iii) Mean free path. Write expressions for each of them. 2½

SECTION–B

6. (a) Describe Ostwald's method for determining viscosity of the liquid. 2

(b) Briefly explain the terms 'Optical activity' and 'Specific rotation'. 2

(c) A solution of a certain optically active substance in water containing 1.56 g in 100 ml rotated polarized light 4.91° in a polarimeter which had a cell 20 cm long. The 'D' line of sodium was used as a light source. Calculate the specific rotation. 2

7. (a) Why is cooling caused by evaporation ? 1

(b) What is Parachor ? Describe briefly the effect of temperature on surface tension. 3

(c) At what angle will X-rays of wavelength 1.542×10^{-10} m undergo second order reflection by planes separated by 3.5×10^{-10} m ? 2

8. (a) What are Primitive and Non-primitive unit cells ? Calculate the number of particles per unit cell in each of them. 2

(b) Derive Bragg's equation for the diffraction of X-rays by crystals. 3

(c) Name one condition under which the crystals of the same substance may give different shapes of the crystals. 1

9. (a) Explain the terms (i) Axis of symmetry, (ii) Plane of symmetry, and (iii) Centre of symmetry. 3

7. (a) Why triplet-curbene is more stable than singlet carbene ?

(b) Explain the stability of carbanions on the basis of different types of hybridisations.

(c) Define Free rudicals. Explain structure, hybridsation and no. of electrons around central carbon atom in free radical. (3×2)

8. (a) What is Corey-House reaction ? Discuss its advantage over Wurtz reaction.

(b) *n*-alkanes with even no. of carbon atoms melt at higher temp. than those with odd no. of carbon atoms.

(c) How can you synthesize *n*-butane from the following compounds.

(i) Ethyl bromide.

(ii) Pentanoic acid. (3×2)

9. (a) How would you prepare the following :

(i) Cyclopropane.

(ii) Cyclopentane.

(b) Give important postulates of Baeyer's Strain theory.

(c) Calculate % of *n*-butyl bromide and sec. butyl bromide by bromination of *n*-butane. (Reactivity of 3°, 2°, 1° hydrogens in bromination is 1600 : 82 : 1) (3×2)

Roll No. ..... Total Pages : 4

GSE/D-17 **796**

CHEMISTRY

(Organic Chemistry)

Paper–III

Time : Three Hours] [Maximum Marks : 32

Note : Attempt *five* questions in all. Q. No. 1 is compulsory. Select *two* questions from each section.

Compulsory Question

1. (a) Define Resonance energy.

(b) Give other name of 'Mesomerism' and 'No-bond Resonance'.

(c) Name the process of separation of recemic mixture.

(d) What is Plane polarised light ?

(e) In which reaction intermediate the hybridisation of central carbon is '*sp*' ?

(f) Why NH_3 acts as nucleophile ?

(g) Which alkane cannot be prepared by Wurtz reaction ?

(h) What do you understand by Strainless rings ? (1×8=8)

SECTION–I

2. (a) How do you justify the acidic character of carboxylic acids in terms of resonance ?

(b) What are + E and – E effects ? Explain with *one* example of each.

(c) What is the difference between Localised and Delocalised chemical bonds ? Explain with examples. (2×3)

3. (a) Explain Molecular chirality. Is it the necessary and sufficient condition for a molecule to show optical activity ?

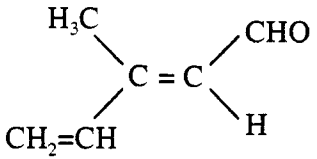
(b) Differentiate between Enantiomers and Diastereomers with examples. (2×3)

4. (a) Discuss briefly the cause and conditions for compounds to show geometrical isomerism.

(b) Assign E and Z configurations to the following :

(i) Malic acid.

(ii)



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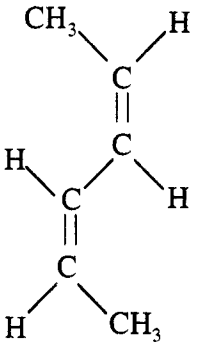
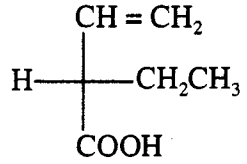


(2×3)

5. (a) Draw Newmann projection formulae of different conformations of *n*-butane and give their probability order.

(b) Assign R and S configurations to the following :

(i)



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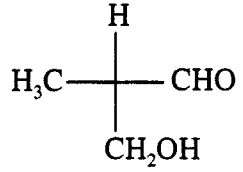

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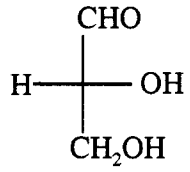

(2×3)

SECTION–II

6. (a) Allyl carbocations are more stable than allayl carbocations. Explain.

(b) Define Electrophiles and select them from the following, giving reasons :

H_2O, BF_3, NH_3, $AlCl_3$, $\overset{\ominus}{C}N$, $\overset{\oplus}{N}O_2$.

(c) What are 'Elimination Reactions' ? Explain with examples. (3×2)

(iv) Bring up.

(v) Fall out.

(vi) By hook or by crook.

(vii) Fair and square.

(viii) Give way.

(ix) In the long run.

Roll No. ..... Total Pages : 6

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GSE/D-17

ENGLISH

Time : Three Hours] [Maximum Marks : 40

Note : Attempt all questions.

1. Read the passage given below and answer the questions that follow : (1×5=5)

And we are put on earth a little space,

That we may learn to bear the beams of love;

And these black bodies and this sunburnt face

Is but a cloud, and like a shady grove.

For when our souls have learned the heat to bear

The cloud will vanish, we shall hear his voice,

Saying : "Come out from the grove, My love and care,

And round my golden tent like lambs rejoice."

Questions :

(a) Name the poem and the poet.

(b) Whose beams of love we may learn to bear ?

(c) What are man's black bodies and sunburnt faces ?

(d) When will the cloud of our skin vanish ?

(e) How will then God call us ?

OR

'She shall be sportive as the fawn

That wild with glee across the lawn

Or up the mountain springs;

And hers shall be the breathing balm,

And hers the silence and the calm

Of mute insensate things.

Questions :

(a) Who will be sportive as the fawn ?

(b) What will she do across the lawn ?

(c) How will she go up the mountain ?

(d) What kind of life will she live ?

(e) What does the poet mean by 'mute insensate things' ?

2. Explain with reference to the context : 3

Thou art slave to fate, chance, kings and desperate men,

And dost with poison, war, and sickness dwell,

And poppy, or charms can make up sleep as well,

And better than they stroke, why swell'st thou then?

OR

Chaos of thought and passion, all confused;

Still by himself abused, or disabused;

Created half to rise, and half to fall;

Great Lord of all things, yet a prey to all.

3. Answer any *three* of the following briefly : (3×2=6)

(a) How and why is the heavenly vision perceived in childhood dimmed as one grows old ?

OR

Why can't his soul regain its pristine glory ?

(b) Why is the King George III despised ?

OR

What makes England 'fainting country' for Shelley ?

(c) How does Milton regret the loss of his 'light' ?

OR

How does Patience forestall the poet's anguish ?

(d) Whom does Flecknoe choose his successor, and why ?

OR

Explain 'But Shadwell never deviates into sense.'

4. How does Shakespeare define true love ? 6

OR

Tennyson celebrates death. Elaborate and comment.
(Crossing the Bar)

5. Translate the following passage into English :

खेलों का हमारे जीवन में बड़ा महत्त्व है। खेल हमें न केवल स्वस्थ बनाते हैं बल्कि हमें सत्य, ईमानदारी और भातृभाव की प्रेरणा भी देते हैं। खेलों से हमें मिलकर काम करने की शिक्षा मिलती है। हमारे अन्दर एकता की भावना पैदा होती है। खेल के

मैदान में ऊंच-नीच का प्रश्न नहीं उठता। एक अच्छे खिलाड़ी की जाति नहीं देखी जाती, उसके अच्छे खेल को प्राथमिकता दी जाती है। भारत एक धर्मनिरपेक्ष देश है जिसमें हर वर्ग और जाति के खिलाड़ियों को महत्त्व दिया जाता है। हमारे खिलाड़ियों ने न केवल भारत में बल्कि अन्तर्राष्ट्रीय स्पर्धाओं में भी बहुत नाम कमाया है।

OR

(For Non-Hindi speaking/Foreign students)

Read the passage and answer the questions that follow :

Among all the gifts you can gift to a child, there is none more likely to add richness than a book. Not a book but the habit of reading. Give him the habit of reading and that too with discrimination and you have done something for which he may be thankful to you for all his life. Books should be the daily companions of the child's life. And they ought not to be associated with the school. Don't make him feel that reading is a task, a lessson. It is the fun he gets out of reading that needs to be emphasized. Let him enjoy reading that needs to be emphasized. Let him enjoy reading. Let it be a treasured part of his daily life. There is hardly any activity- a dream or ambition– that reading will not help.

Questions :

(a) What is the most valuable gift we can give to a child ?

(b) What should the child be made to learn ?

(c) What ought not to be associated with the school ?

(d) In what way will reading help a child ?

6. Write a paragraph of about 250 words on any *one* of the following topics : 6

(a) Terrorism.

(b) Pleasures of Reading.

(c) Women Empowerment.

(d) Internet – A Modern Day Asset.

(e) Value of Sports.

7. Attempt any *ten* of the following : 10

(a) Fill in the blanks with appropriate prepositions :

(i) The house was replete ..... rats.

(ii) He studied ..... Oxford.

(iii) He is indebted ..... his friends for their help.

(iv) Happiness consists ..... satisfaction.

(b) Correct the following sentences :

(i) One should do his duty.

(ii) Sita is my cousin sister.

(iii) The cattles are grazing in the field.

(iv) Neither of these two boys are going to pass.

(v) The English is spoken by English.

(c) Use the following in sentences of your own :

(i) Abide by.

(ii) See through.

(iii) Run over.

Roll No. ..... Total Pages : 3

GSE/D-17

801

BOTANY

(Diversity of Microbes)

Paper–I

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *two* questions from each unit. Draw neat and well labelled diagrams where they are necessary.

Compulsory Question

1. Explain the following :

(a) Nucleoid.

(b) Gram stain.

(c) Antibiotics.

(d) Gametophyte.

(e) Coenocytic.

(f) Name of Alga having gongrosira stage.

(g) Late Blight of Potato is caused by which fungus?

(h) Name the secondary host of *Puccinia graminis tritici.*

(1×8=8)

UNIT–I

2. Write short notes on the following :

   (a) Binary fission in Bacteria.

   (b) Role of Bacteria in Industry.

   (c) Heterocyst. (4+2+2=8)

3. Describe Asexual reproduction in Volvox with suitable diagrams. 8

4. (a) Write short note on Synzoospore.

   (b) Write the uses of Algae in Agriculture and Industry.

   (c) Draw well labelled diagram of Oedogonium cell. (3+3+2=8)

5. Give the diagrammatic representation of life-cycle of Ectocarpus showing sexual and asexual reproduction. 8

UNIT–II

6. (a) What is the Biological status of viruses ?

   (b) Describe the structure of a Bacteriophage with the help of a well labelled diagram. (3+5=8)

7. Explain the following :

   (a) Asexual reproduction in Phytophthora.

   (b) Sporangium structure in Mucor. (6+2=8)

8. (a) Give the systematic position of Penicillium.

   (b) Explain Gill structure in Agaricus.

   (c) Write symptoms of Red rot of Sugarcane. (2+4+2=8)

9. Explain the following :

   (a) Uredinial and Aecidial stages of Puccinia.

   (b) Crustose lichen and Poliose lichen. (4+4=8)

Roll No. .....

Total Pages : 3

GSE/D-17

802

BOTANY

(Cell Biology)

Paper – II

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *five* questions in all. Question No. 1 is compulsory (Short answer type), select *two* questions from each unit. All questions carry equal marks. Draw neat and well labelled diagrams where necessary.

Compulsory Question

1. (a) Name the disc-like structure present on the outside of primary constriction.

(b) What is Chiasma ?

(c) What are Tunnel proteins ?

(d) Name an aneuploid having one additional isochromosome.

(e) Name the scientist who actually observed lysosomes under an electronic microscope.

(f) Which structure forms the spindle fibres in the plant cell during division ?

(g) What is Synaptinemal complex ?

(h) What is Tandem duplication ? (1×8=8)

UNIT–I

2. (a) Define Plasma membrane. Describe its structure.

   (b) Differentiate between Primary and Secondary wall. (5+3)

3. With the help of suitable diagrams explain the ultra-structure and functions of Mitochondria. 8

4. (a) Write a short note on Golgi apparatus. 4

   (b) Describe the structure of Nucleolus. 4

5. Explain the structure and functions of the following :

   (a) Peroxiosomes.

   (b) Vocuoles. (4+4)

UNIT–II

6. Write short notes on the following :

   (a) Polytene chromosomes.

   (b) Euchromatin and Heterochromatin. (4+4)

7. What is Cell cycle ? Describe the process of mitosis in plant cell with suitable well labelled diagrams. 8

8. (a) Define Polyploidy. Discuss the role of Polyploidy in plant breeding.

   (b) Give a brief account of sex determination in plants. (5+3)

9. What are Translocations ? Explain with suitable examples. Give its significance. 8

Roll No. .....

Total Pages : 3

803

GSE/D-17

ZOOLOGY

(Life and Diversity from Protozoa to Porifera and Cell Biology–I)

Paper : I

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Attempt *two* questions from section A and *two* questions from section B.

Compulsory Question

1. Write short notes on :

(a) Schizogony.

(b) Schuffner's granules.

(c) Excystation.

(d) Amphiblastula.

(e) Pentactine.

(f) Plasmolysis.

(g) Residual bodies.

(h) Dobber's dot.

(i) Autophagy.

(j) Microtubule associated proteins. (1×10=10)

SECTION–A

2. (a) Explain in detail the erythrocytic schizogony of malarial parasite *Plasmodium.* 4½

   (b) Polymorphism in *Trypanosoma.* 3

3. Explain in brief :

   (a) Encystation and metacystic development of *Entamoeba histolytica.* 3½

   (b) Ookinete and sporogony in *Plasmodium.* 4

4. Classify the Phylum Porifera upto order level giving the characters and examples of each group. 7½

5. (a) Describe four grades of the Levconoid canal system in sponges. 4

   (b) Discuss the development of *scypha* in detail. 3½

SECTION–B

6. (a) Describe the ultrastructure of Microfilaments. 5

   (b) Differentiate between centriole and Basal body. 2½

7. (a) Describe different views regarding the biogenesis of Mitochondria. 4

   (b) List of function of Lysosomes. 3½

8. (a) Discuss polymorphism in lysosomes. 5

   (b) Explain various modification of Endoplasmic reticulum. 2½

9. (a) Write in detail on the modification of the plasma membrane. 5½

   (b) Differentiate between diffusion and osmosis. 2.

Roll No. .....

Total Pages : 3

GSE/D-17

804

ZOOLOGY

(Life and Diversity from Coelenterata to Helminths and Cell Biology–II)

Paper–II

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *five* questions in all. Q. No. 1 is compulsory. Select *two* questions each from Section A and B. Draw well labelled diagrams also.

Compulsory Question

1. Answer the following questions in not more than 20 words :

(a) What is Organ system level of organization ?

(b) Define Polymorphism.

(c) What is Metagenesis ?

(d) What is Polyembryony ?

(e) What are Protonephridia ?

(f) What is Sat-chromosome ?

(g) What are Sese-chromosomes ?

(h) Define Chiasma.

(i) What is Leukaemia ?

(j) What is Agglutination ? (1×10=10)

SECTION–A

2. (a) Explain the structure of the Medusa of *Obelia.* 3½

(b) Describe the structure and function of Statocyst. 4

3. (a) Give the general characters of Phylum Coelenterata. 3

(b) Define Polymorphism. Write about various zooids found in Coelenterates. 4½

4. (a) Describe about the phenomenon of Delayed Polyembryony of *Fasciola hepatica.* 5

(b) Briefly write about the digestive system of *Fasciola hepatica.* 2½

5. Describe the life-history, mode of infection and pathogenicity of *Trichinella and Schistosoma.* 7½

SECTION–B

6. (a) Explain the structure and functions of Nucleosome. 4½

(b) Draw well labelled diagram of Eukaryotic Nucleus. 3

7. (a) Explain the process of Synapsis and Crossing over. 4½

(b) Write down the differences between Karyokinesis and Cytokinesis. 3

8. (a) Write about the different types of Cancer. 3½

(b) How Cancer is treated ? Explain the various methods. 4

9. (a) Differentiate between Active and Passivee Immunity. 4

(b) Describe the different types of B-lymphocytes and T-lymphocytes. 3½

Roll No. ..... Total Pages : 3

GSE/D-17 **807**

ELECTRONICS

(Electronic Devices and Circuits-I)

Paper–I (Theory)

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all, selecting *one* question from each unit. Question No. 1 is compulsory.

Compulsory Question

1. (a) Justify the statement that "Majority Carrier diffuses across P-N junction under Forward Bias Condition."

(b) Discuss the disadvantages of Center Tapped FWR.

(c) Why Bias region is kept thin and very lightly doped?

(d) Why CE configuration is preferred over other configurations? (2×4=8)

UNIT–I

2. (a) Define and explain the following:

(i) Drift and Diffusion Current.

(ii) Space Charge Capacitor and Diffusion Capacitor. (2×2=4)

(b) Give a comparative study between Avalanche Breakdown and Zener Breakdown. (4)

3. (a) Define and explain Line Regulation and Load Regulation. (2×2=4)

(b) Explain the working of Negative Reference Level series clipping circuit in detail. (4)

UNIT–II

4. (a) Discuss the working of a Bridge FWR circuit in detail. (5)

(b) Define and derive an expression for RMS value of output in a Bridge FWR circuit. (3)

5. (a) Design a Voltage doubler circuit and explain its working. (4)

(b) Explain the working of LC filter and also derive an expression for ripple factor in it. (4)

UNIT–III

6. (a) Discuss Transistor Current components of a transistor Biased in Active mode in detail. (4)

(b) Explain Active, Cutoff and Saturation regions in Output characteristics curve of CB Configuration. (4)

7. (a) What do you mean by "Transistor as an Amplifier"? Discuss in detail. (4)

(b) Discuss Input Static characteristics curves of CE configuration. (4)

UNIT–IV

8. (a) Obtain h-model of Transistor in CE configuration. (5)

(b) Draw Circuit diagram of Emitter follower and explain its working. (3)

9. (a) State and Explain Miller's Dual Theorem. (4)

(b) Derive an expression for Voltage Gain with source and Output Conductance using h-model of transistor. (4)

Roll No. ..... Total Pages : 3

GSE/D-17 **808**

ELECTRONICS

(Digital Electronics–I)

Paper–II (Theory)

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Select *one* question from each unit.

Compulsory Question

1. (a) Explain how negative numbers are represented in Binary Number System.

(b) Why NAND logic gate is called Universal logic gate?

(c) Define and explain Propagation delay.

(d) Why DTL gates are not used in industrial environment? (2×4=8)

UNIT–I

2. (a) Find P, Q and R in the following :

$(1A)_{16} = (P)_2 = (Q)_8 = (R)_{10}$. (3)

(b) Discuss BCD codes in detail. (5)

3. (a) Perform the following operations using 1's complement method :

$(27)_{10} - (16)_{10}$. (3)

(b) Discuss EBCDIC codes in detail. (5)

UNIT–II

4. (a) Define and explain Duality Principle using suitable diagram. (3)

(b) Simplify the following using K-map and implement using NOR gates only : (5)

$f(A, B, C, D)$

$$= \sum_{1}(0, 1, 2, 5, 8, 10, 11, 14, 15) + \sum_{\phi}(2, 4, 10).$$

5. (a) Define and discuss XNOR and NAND gates. (4)

(b) Prove the following identities :

(i) $X \cdot Y + X \cdot Z + X \cdot Y \cdot Z = X \cdot Y + X \cdot Z$

(ii) $X \cdot Y' + Y \cdot Z' + Z \cdot X' = X' \cdot Y + Y' \cdot Z + Z' \cdot X$

(2×2=4)

UNIT–III

6. (a) Define and discuss (i) Fan-in, and (ii) Noise margin. (4)

(b) Explain the operation of RTL NOR gates. (4)

7. (a) Explain the operation of DTL NAND gates. (4)

(b) Discuss Loading and Fan-out in DTL NAND gates. (4)

UNIT–IV

8. (a) Explain logic operation of HTL NAND gate. (4)

(b) Discuss Current-Sink logic and Power Dissipation in TTL NAND gate. (4)

9. (a) Explain the working of MOS NAND gate in detail. (4)

(b) Discuss Power Dissipation in MOS NAND gate. (4)

Roll No. ..... Total Pages : 2

809

GSE/D-17

COMPUTER SCIENCE

(Computer and Programming Fundamentals)

Paper–I

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all by selecting *one* question from each unit. Question number 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. Define the terms :

(a) Translators.

(b) Flash Memory.

(c) Motherboard.

(d) Ports. (2×4=8)

UNIT–I

2. (a) Define Computer alongwith its components. What are the basic characteristics of computer system?

(b) Explain the application of computers in various fields. (2×4=8)

3. Differentiate between :

(a) Primary *vs.* Secondary Memory.

(b) RAM *vs.* ROM. (2×4=8)

UNIT–II

4. (a) Define the term hardware and software. Also explain how the two are related to each other?

(b) Explain the types of software used in computer system. (4×2=8)

5. What do you mean by Operating System? Explain the characteristics of following Operating Systems:

(a) Time Sharing.

(b) Real Time.

(c) Multitasking. 8

UNIT–III

6. Define the term Debugging. Explain the types of errors occurring in a program. How they can be removed? 8

7. Define Algorithm. What are the characteristics of algorithm? Write an algorithm to find HCF of given numbers. 8

UNIT–IV

8. What do you mean by sorting techniques? Explain Insertion Sort in detail. 8

9. Define Computer Language and explain the generations of computer languages. 8

Roll No. ..... Total Pages : 2

GSE/D-17 **811**

COMPUTER SCIENCE
(PC Software)
Paper–II

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* question in all, selecting *one* question from each unit. Question No. 1 is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) What is screen saver ? Write steps to change screen saver.

(b) What is a Style ? Write steps to use Readymade Style.

(c) Compare relative addressing and absolute addressing in MS-Excel.

(d) What are handouts and speaker notes in PowerPoint. (2×4=8)

UNIT–I

2. (a) What is a Window? Discuss its types with examples.

(b) What is an Icon? Discuss various type of Icons. Write Steps to create Shortcut Icon. (4×2=8)

3. Write note on the following:

(a) Adding Hardware to Computer.

(b) Overview of Window Accessories Word Pad and Paint. (4×2=8)

UNIT–II

4. (a) Explain Paragraph Formatting features in MS-Word.

(b) What is Autocorrect ? Explain by using suitable examples. (4×2=8)

5. (a) Discuss Mail Merge with example.

(b) What is Macro ? Write steps to Record and Run a macro in MS-Word. Give Example. (4×2=8)

UNIT–III

6. (a) What is function in MS-EXCEL? Explain any *four* Mathematical Functions by taking examples.

(b) What is Editing? How editing is performed in MS-Excel? (3+5=8)

7. (a) Explain with examples Goal Seek and Sorting in MS-Excel.

(b) What is the purpose of Consolidation? How you can consolidate data in MS-Excel? Write steps with examples. (4×2=8)

UNIT–IV

8. (a) How can you create and Manipulate your presentation ? Explain with examples.

(b) Discuss Organizational Charts in PowerPoint. (4×2=8)

9. Explain Transition and Animation in PowerPoint. Take examples of your choice. 8

Roll No. .....

Total Pages : 3

GSE/D-17

813

COMPUTER APPLICATIONS
(Fundamentals of Computers and
Windows Operating System)
Paper–I

Time : Three Hours]

[Maximum Marks : 40

Note : Question No. 1 is compulsory. Attempt any *four* questions out of units I, II, III, and IV by selecting *one* question from each Unit. All questions carry equal marks.

Compulsory Question

1. (a) Explain BCD and ABCDIC coding.

(b) What is Voice Recognition? Explain.

(c) What is Static RAM.

(d) Explain the terms : Recycle Bin, My Documents.

(2×4=8)

UNIT–I

2. Write short note on the following :

(a) CPU.

(b) ALU.

(c) Control Unit.

(d) Memory Unit. (4×2=8)

3. (a) Convert following Decimal Number in to Octal Number (i) 1692.025 (ii) 225.225.

(b) Convert following Decimal Number into Hexa-Decimal Numbers (i) 7547 (ii) 5279. (2×4=8)

UNIT–II

4. ExpIain in detail Inkjet and Laser printer. 8

5. Explain the following :

(a) Bar Code Reader.

(b) Digitizing Tablet.

(c) Scanner.

(d) Light Pen. 8

UNIT–III

6. What is RAM and ROM? Explain their use in computer memory. Explain various types of ROM available. 8

7. Classify, Magnetic Disks. Compare Magnetic Disk and Magnetic Tape Storage Devices. 8

UNIT–IV

8. What are the functions of an Operating System? Explain in detail. 8

9. (a) Write the steps to create file and folders in windows operating system.

(b) How do we change date and time in windows operating system ?

(c) How do we install a printer in windows operating system ? (2,3,2)

Roll No. ..... Total Pages : 3

GSE/D-17 **815**

COMPUTER APPLICATIONS

(Office Automation Tools)

Paper–II

Time : Three Hours] [Maximum Marks : 40

Note : Question No. 1 is compulsory. In addition, attempt *four* more questions selecting *one* question from each unit.

Compulsory Question

1. Describe the following in short :

(a) Slide.

(b) Slide Transition.

(c) Autotext.

(d) Workbook.

(e) Active Cell.

(f) IF function. 8

UNIT–I

2. (a) Is it possible to add a movie in a slide ? If yes, state steps for this.

(b) State steps to set display time of slides in a presentation. (4×2=8)

3. (a) What do you mean by Handouts ? Briefly describe their utilization and implementation in PowerPoint.

(b) Briefly discuss features of Outlook Express. (4×2=8)

UNIT–II

4. Briefly discuss the following featurs in MS-Word :

(a) Thesaurus.

(b) Autotext.

(c) Header and Footer. (3+2+3=8)

5. (a) Briefly discuss Mail merge feature in MS-Word.

(b) Write steps to apply Spellcheck feature in MS-Word. Briefly describe various options available with it. (4×2=8)

UNIT–III

6. Briefly describe the following features of MS-Excel :

(a) Inserting a worksheet in a workbook.

(b) Changing cell width.

(c) Rotating text in a cell.

Write steps for each of these. (3+2+3=8)

7. Write steps to apply following in MS-Excel :

(a) Freezing cells.

(b) Finding and Replacing data.

(c) Copying data. (3+3+2=8)

UNIT–IV

8. (a) What do you mean by Macros in Excel ? Write steps to run a macro.

(b) Briefly discuss 'What-if analysis' feature in Excel. (4×2=8)

9. (a) Briefly describe any *two* types of charts in Excel.

(b) Briefly describe the following functions in Excel giving suitable example :

(i) Max.

(ii) Count. (4×2=8)

Roll No. ..... Total Pages : 2

GSE/D-17 **821**

BIOTECHNOLOGY

(Introduction to Biotechnology)

Paper–I

Time : Three Hours] [Maximum Marks : 40

Note : Attempt Q. No. 1 and *four* others selecting *two* questions from each unit.

1. Write short notes on the following :

(a) Immobilized enzymes.

(b) Minisatellites.

(c) COD and BOD.

(d) Patents. (4×2=8)

UNIT–I

2. What are the Monoclonal bodies ? How are they produced ? 8

3. What do you mean by Recombinant DNA technology ? Discuss the different steps used in production of Recombinant DNA. 8

4. Describe briefly :

(a) Embryo transfer technology.

(b) Application of Plant tissue culture. 8

UNIT–II

5. Discuss the applications of Biotechnology in Agriculture and Medicine. 8

6. What is Bioremediation ? How it can be used to reduce soil and water pollution ? 8

7. What is Intellectual property ? What rights are available to protect it ? Discuss briefly. 8

Roll No. .....

Total Pages : 3

GSE/D-17

822

BIOTECHNOLOGY

(Biochemistry–I)

Paper–II

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *five* questions in all. Question No. 1 is compulsory. Attempt *two* questions from each unit. All questions carry equal marks.

Compulsory Question

1. Explain the following briefly :

(a) Epimers.

(b) Glycoproteins.

(c) Insulin.

(d) H-bonding.

(e) Asymmetric Carbon.

(f) Denaturation of DNA.

(g) Peptide bond.

(h) ATP. (1×8=8)

UNIT–I

2. (a) Define Polysaccharides. Describe the structure and functions of any *two* polysaccharides. 4

(b) What are Mucopolysaccharides ? Give a brief account of the structure and functions of Hyaluronic acid and Chondroitin sulphate. 4

3. (a) Define Peptide bond. Describe the structure and functions of any *three* biologically important peptides. 4

(b) What are Disaccharides ? Explain the structure and functions of lactose, sucrose and maltose. 4

4. (a) Define Biomolecules. Discuss the important features of biomolecules. 4

(b) Briefly discuss optical and chemical properties of amino acids. 4

UNIT–II

5. (a) Classify Proteins on the basis of their structure and functions. 4

(b) What are Waxes ? Explain the structure and functions of some important waxes. 4

6. (a) Define Nucleic acids. Discuss the structure and nomenclature of nucleosides. 4

(b) Define Lipids. Discuss the structure and functions of phospholipids. 4

7. Write short notes on the following :

(a) NAD.

(b) Rancidity.

(c) Glycolipids.

(d) Steroids. (2×4=8)

8. What is the importance of personal hygiene in our daily life ?
निजी स्वच्छता का हमारे दैनिक जीवन में क्या महत्त्व है ?

9. How can school hygiene be promoted in schools ?
स्कूलों में स्कूली स्वच्छता की किस प्रकार भूमिका स्थापित करेंगे ?

Roll No. ..... Total Pages : 04

GSE/D-17 1169

HYGIENE & PROMOTIVE HEALTH

Paper 102

Time : Three Hours] [Maximum Marks : 40

Note : Q. No. 1 is compulsory. Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.
प्रश्न संख्या 1 अनिवार्य है । प्रत्येक इकाई से कम से कम एक प्रश्न चुनते हुए, कुल पाँच प्रश्नों के उत्तर दीजिए । सभी प्रश्नों के अंक समान हैं ।

Compulsory Question
(अनिवार्य प्रश्न)

1. Define and explain any *eight* of the following :
   (i) Immunity
   (ii) Rest
   (iii) Mental health
   (iv) Personal hygiene
   (v) Vaccination
   (vi) WHO
   (vii) Pulse Polio

(viii) AIDS

(ix) Hepatitis

(x) School Hygiene.

निम्नलिखित में से किन्हीं **आठ** को परिभाषित कीजिए तथा समझाइए :

(i) रोग निरोधक क्षमता

(ii) आराम

(iii) मानसिक स्वास्थ्य

(iv) निजी स्वच्छता

(v) टीकाकरण

(vi) WHO

(vii) पल्स पोलियो

(viii) एड्स

(ix) यकृत शोथ (हेपेटाइटिस)

(x) विद्यालय की स्वच्छता ।

Unit I
इकाई I

2. Describe in detail mode of spread, symptoms, prevention and treatment of disease dengue spread by insect bite.
मच्छर के काटने से होने वाले रोग डेंगू के फैलने के ढंग, लक्षण, उपचार तथा बचाव की विस्तृत विवेचना कीजिए ।

3. Discuss mode of spread, symptoms prevention and treatment of polio.
पोलियो के फैलाव, लक्षण, रोकथाम तथा उपचार की विस्तृत जानकारी दीजिए ।

4. How is the disease tetanus caused, spread, prevented and treated ? Explain in detail.
धनुर्वाय बीमारी के कारण, फैलाव, रोकथाम तथा उपचार किस प्रकार करेंगे ? विस्तृत जानकारी दीजिए ।

5. Write causes, symptoms, mode of spread, prevention and treatment of diarrhoea.
दस्त लगने के कारण, लक्षण, फैलाव, रोकथाम तथा उपचार के बारे में लिखिए ।

Unit II
इकाई II

6. Give classification of immunity. What is the importance of immunity in human life ? Give vaccination schedule.
रोग निरोधक क्षमता का वर्गीकरण कीजिए । रोग निरोधक क्षमता का मानव जीवन में क्या महत्त्व है ? टीकाकरण की अनुसूची बनाइए ।

7. Write short notes on any *two* of the following :

(i) Positive health

(ii) Mental health

(iii) National health programmes.

निम्नलिखित में से किन्हीं **दो** पर संक्षिप्त टिप्पणियाँ लिखिए :

(i) सकारात्मक स्वास्थ्य

(ii) मानसिक स्वास्थ्य

(iii) राष्ट्रीय स्वास्थ्य कार्यक्रम ।

Roll No. ..... Total Pages : 03

GSE/D-17 1170

INTRODUCTION TO TEXTILES

Course 103

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting *two* questions from each Unit as well as compulsory question.
अनिवार्य प्रश्न के साथ प्रत्येक इकाई से **दो** प्रश्न चुनते हुए कुल **पाँच** प्रश्नों के उत्तर दीजिए ।

Compulsory Question
(अनिवार्य प्रश्न)

1. Write short notes on the following :

(a) Fiber

(b) Textile

(c) Twist

(d) Knotting. **2×4=8**

निम्नलिखित पर संक्षिप्त टिप्पणियाँ लिखिए :

(अ) रेशा

(ब) टेक्सटाइल

(स) घुमाना

(द) गाठ बांधना ।

Unit I
इकाई I

2. Explain the characteristics of any *one* natural plant fiber of your choice. 8
अपनी पसन्द के किसी भी **एक** प्राकृतिक वानस्पतिक रेशे के गुणों की व्याख्या कीजिए ।

3. Discuss the manufacturing process of wool. 8
ऊन की उत्पादन विधि की व्याख्या कीजिए ।

4. Write down the properties of polyester fiber. 8
पॉलीस्टर रेशे की विशेषताओं को लिखिए ।

5. How the sield fiber is important to consumer ? 8
ग्राहकों के लिए रेशम का रेशा कैसे महत्त्वपूर्ण है ?

Unit III
इकाई III

6. What do you mean by yarn ? Explain different types of yarns. 8
धागे का क्या अर्थ है ? इनके विभिन्न प्रकार बताइए ।

7. Explain plain weave and its types. 8
सादी बुनाई तथा इसके प्रकारों की व्याख्या कीजिए ।

8. Discuss knitting technology in detail. 8
निटिग टेक्नोलॉजी की विस्तार से व्याख्या कीजिए ।

9. Write short notes on the following :
(a) Bonding
(b) Nettling.
निम्नलिखित पर संक्षिप्त टिप्पणियाँ लिखिए :
(अ) बोडिंग
(ब) नेटलिंग ।

Roll No. ..... Total Pages : 03

GSE/D-17 1173

INTRODUCTION TO HUMAN DEVELOPMENT

Course 106

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *two* questions from each Unit. Q. No. **9** is compulsory.
प्रत्येक इकाई से **दो** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए । प्रश्न संख्या **9** अनिवार्य है ।

Unit I
इकाई I

1. Discuss the importance of study of Human Development. How study of Human Development is helpful to parents and teachers ? 8
मानव विकास के अध्ययन की महत्ता पर चर्चा कीजिए । मानव विकास का अध्ययन अभिभावकों और शिक्षकों के लिए किस प्रकार सहायक है ?

2. Write short notes on the following :
   (i) Growth and Development 4
   (ii) List the stages of life span with age. 4

निम्नलिखित पर संक्षिप्त टिप्पणियाँ लिखिए :

(i) वृद्धि एवं विकास

(ii) जीवन अवधि की अवस्थाएँ आयु सहित सूची बनाइए ।

3. Discuss the historical trends in the field of Human Development with special reference to the medieval viewpoint. 8

मध्यकालीन दृष्टिकोण के विशेष संदर्भ में मानव विकास के क्षेत्र में ऐतिहासिक रुझानों की चर्चा कीजिए ।

4. What is the difference between growth and development ? Elaborate with examples. 8

वृद्धि और विकास में क्या अंतर है ? उदाहरण देकर विस्तृत कीजिए ।

Unit II

इकाई II

5. Write short notes on the following :

(i) Observation Method 4

(ii) Cross-sectional Method. 4

निम्नलिखित पर संक्षिप्त टिप्पणियाँ लिखिए :

(i) निरीक्षण विधि

(ii) समकालीन विधि ।

6. Write an essay on puberty spurt. 8

वय:संधि गति पर एक निबंध लिखिए ।

7. Discuss common emotions of babyhood. 8

वत्सावस्था के सामान्य संवेगों की चर्चा कीजिए ।

8. List the principles of development and write in detail about any *two*. 8

विकास के सिद्धान्तों की सूची बनाइए और किन्हीं **दो** का विस्तारपूर्वक वर्णन कीजिए ।

Compulsory Question

(अनिवार्य प्रश्न)

9. Attempt any *four* briefly : 2×4=8

(i) Cephalocandal and Proximodestal development

(ii) Physical development in babyhood

(iii) Case Study method

(iv) Role of environment in development

(v) Jealousy in children.

किन्हीं **चार** का संक्षिप्त उत्तर लिखिए :

(i) सिर से पैर की ओर तथा केन्द्र बिन्दु से बाहर की ओर विकास

(ii) वत्सावस्था में शारीरिक विकास

(iii) व्यक्ति इतिहास विधि

(iv) विकास में पर्यावरण की भूमिका

(v) बच्चों में ईर्ष्या ।

Roll No. ..... Total Pages : 02

BCA/D-17 1227

COMPUTER & PROGRAMMING FUNDAMENTALS

BCA-III

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory.

Compulsory Question

1. (a) What do you mean by CPU ? **2**

(b) What is the purpose of ROM ? **2**

(c) Define Software. **2**

(d) Define Computer Virus. **2**

(e) What is Merging ? **2**

(f) Define Language Translator. **2**

(g) What do you mean by Computer Program ? **2**

(h) Define output devices with the help of suitable examples. **2**

Unit I

2. (a) Define Computer. **4**

(b) Also write down the characteristics of a Computer. **12**

3. (a) What do you mean by Memory ? 4

(b) Explain Memory Hierarchy. 12

Unit II

4. (a) Define an operating system. 4

(b) Discuss the functions of an Operating System. 12

5. (a) Define input devices. 4

(b) Explain any *three* input devices. 12

Unit III

6. Discuss the concept of Program Design in detail. 16

7. (a) What is an Algorithm ? 4

(b) Write an algorithm to find the average marks of a class of 60 students in the subject of Computer Science. 12

Unit IV

8. (a) What do you mean by Searching ? 4

(b) On what type of lists Binary Search Algorithm is applicable ? 2

(c) Write down the algorithm for Binary Search Method. 10

9. Write down the characteristics of a good programming language. 16

Roll No. ..... Total Pages : 02

BCA/D-11

WINDOWS AND PC SOFTWARE
BCA-112

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all, selecting at least *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

1. (a) Explain Desktop and its contents. 4
   (b) Explain browsing the web with Internet Explorer. 4
   (c) Explain different view of worksheet. 4
   (d) Explain Pivot table and Pivot chart. 4

Unit I

2. Explain what is Windows Operating system ? Also explain how to manage files, folders, disk and recycle bin. 16

3. Explain the hardware requirements of Window operating system. Also windows accessories and its facilities. 16

Unit II

4. Explain various accessibility features of Window operating system. 16

5. Explain various system tools and multimedia features of Window Operating system. 16

Unit III

6. Explain various features used in work sheet with data, cell and text. Also, explain various data types in a worksheet. 16

7. Explain various steps of worksheet. Also explain various freezing, hiding, splitting and cell formating. 16

Unit IV

8. Explain the concept of multiple worksheet. Also explain how to create and use multiple worksheet. Also explain various types of function in a worksheet. 16

9. Explain, how to sort, filter and making query on a database. 16

Roll No. ..... Total Pages : 04

BCA/D-17 1229

MATHEMATICS

BCA-113

Mathematical Foundation-I

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. Q. No. **1** is compulsory.

1. (a) If A = {4, 5, 8, 12}, B = {1, 4, 6, 9} and C = {1, 2, 3, 4}, then find A – (C – B). **4**

(b) Find the value of n if : **3**

$$\frac{\lfloor 2n}{\lfloor 3 \lfloor 2n-3} : \frac{\lfloor n}{\lfloor 2 \lfloor n-2} = 44 : 3$$

(c) Prove that : **3**

$$\lim_{n\to\infty} \frac{\sum n}{n^2} = \frac{1}{2}$$

(d) Differentiate $\frac{x^2}{1+x^2}$ w.r.t. x^2. **3**

7. (a) Solve the differential equation : **8**

$$\{x^2y - 2xy^2\}dx - \{x^3 - 3x^2y\}dy = 0$$

(b) Solve the differential equation : **8**

$$\{1 + e^{x/y}\}dx + e^{x/y}\left\{1 - \frac{x}{y}\right\}dy = 0$$

Section IV

8. (a) Solve the differential equation : **8**

$$\frac{d^3y}{dx^3} + \frac{d^2y}{dx^2} + \frac{dy}{dx} + y = \sin 2x$$

(b) Solve the differential equation : **8**

$$\frac{d^2y}{dx^2} - 2\frac{dy}{dx} + y = xe^x \sin x$$

9. (a) Solve the differential equation : **8**

$$x^2\frac{d^2y}{dx^2} - 2x\frac{dy}{dx} - 4y = x^2$$

(b) Solve the differential equation : **8**

$$(x+1)^2\frac{d^2y}{dx^2} + (x+1)\frac{dy}{dx} = (2x+3)(2x+4)$$

(c) Find the order and degree of the following differential equation : 2

$$\sqrt{1+\frac{dy}{dx}} = x.$$

Section I

2. (a) For a certain test a candidate could offer English or Hindi or both the subjects. Total number of students was 500, of whom 350 appeared in English and 90 in both subjects. Use set operation to show : 8

(i) How many appeared in Hindi ?

(ii) How many appeared in English only ?

(iii) How many appeared in Hindi only ?

(b) If R is an equivalence relation on a set A, show that R^{-1} is also an equivalence relation on A. 5

(c) Show that $^{n}P_{r} = 2.{}^{n-1}P_{r-1}$ for all n. 8

(b) There are 6 boys and 5 girls in a class. A committee of 5 is to be formed such that it contains 3 boys and 2 girls. In how many ways can this be done ? Also find the number of ways if at least one girl is always in the committee. 8

Section II

4. (a) Show that $\lim_{x \to 0} \frac{e^{x}-1}{x} = 1$. 5

(b) If $y = \sqrt{\frac{1-x}{1+x}}$, prove that : 8

$$\left(1-x^{2}\right)\frac{dy}{dx} + y = 0$$

5. (a) If $\sqrt{1-x^{2}} + \sqrt{1-y^{2}} = a\left(x-y\right)$, prove that : 8

$$\frac{dy}{dx} = \frac{\sqrt{1-y^{2}}}{\sqrt{1-x^{2}}}$$

(b) If $y = e^{ax}\sin bx$; prove that : 8

$$\frac{d^{2}y}{dx^{2}} - 2a\frac{dy}{dx} + \left(a^{2}+b^{2}\right)y = 0$$

Section III

6. (a) Find the differential equation of the family of curves $y = Ae^{2x} + Be^{3x}$, where A and B are arbitrary constants. 8

(b) Solve the differential equation : 8

$$\left(1+x^{2}\right)\frac{dy}{dx} + 2xy - 4x^{2} = 0$$

Or

Write a letter to the Postmaster of your town complaining against the irregular delivery of letters. **16**

8. Develop one dialogue-based paragraph of about **200** words on the situation given below : **16**

Facing an Interview for a Job

Or

Greeting Guests at a Wedding Party

Or

Getting a Bank ATM card issued

Unit V

9. What is the procedure to seek information under RTI Act, 2005 ? How do the Public Information Officers appointed as per the provisions of the RTI Act function ? What sort of information can they provide under the Act ? **16**

10. How do the Appellate Authorities appointed as per the provisions of the RTI Act function ? What are the terms and conditions of the appointment of the members of State Information Commission(s) and Central Information Commission ? **16**

Roll No. ..... **Total Pages : 06**

BCA/D-17 1231

COMMUNICATIVE ENGLISH

BCA-115

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. What is the role of the teacher in the Gandhian scheme of education ?

Or

Bring out the elements of humour in the play '*Rory Aforesaid*'. **16**

2. (a) Why did Grigory Petrov wish to live another life again ?

Or

What made Foreman think of opening a tobacco shop ? **4**

(b) How does man treat the animal ?

Or

What does Narayan say about admissions in our educational institutions ? 3

(c) Why does the average man take everything for granted ?

Or

What does the exercise of the spirit according to Gandhiji, depend on ? 3

(d) How did Ranji lose the 'magic' bat ?

Or

How did the village boys treat old Bapu when he was a small boy ? 3

(e) What did MacIntosh advise Rory to do in the court ?

Or

Why were Jacob and Marthe ready to do anything to save the life of Dr. Kraus ? 3

Unit II

3. Read the passage given below and answer the questions that follow :

Avoiding the other players, Ranji walked slowly homewards, head down, hands in his pockets. He was quite upset. He had been trying so hard and practising so regularly, but when an important game came along, he failed to make a big score. It seemed there was nothing he could do about it. But he loved playing cricket, and he couldn't bear the thought of being out of the school team.

Questions :

(a) Name the story and its writer. 4

(b) What did Ranji do ? 3

(c) Why was he upset ? 3

(d) What was the cause of his disappointment ? 3

(e) What could he not bear ? 3

4. Write notes on the following :

(a) Advantages of e-Mail 5

(b) Composing and sending a Text Message 5

(c) Procedure for sending FAX. 6

Unit III

5. Attempt any *sixteen* sentences. Do as directed : 16

(a) Insert suitable *Articles* in the blank spaces (if required) :

(i) She plays.....tennis very well.

(ii) .....water in that stream is not suitable for drinking.

(iii) .....happiness is an inner state of mind.

(iv) Her elder brother is.....I.A.S. officer.

(b) Use correct Prepositions :

(i) Monty gets up.....five o'clock every morning.

(ii) Those who live.....glass houses should not throw stones at others.

(iii) I prefer a humorous play.....a serious one.

(c) Fill in the blanks with correct form of Verbs :

(i) A new car.....(cost) a lot of money.

(ii) There.....(be) little hope of his coming now.

(iii) They.....(hear) someone opening the gate.

(iv) Mr. Yogesh usually.....(go) to office by car.

(d) Tag questions :

(i) The gardener is watering the plants.

(ii) The journey was not an easy one.

(iii) They have finished their work.

(iv) He easily loses his temper.

(e) Change the voice :

(i) Please bring me a cup of coffee.

(ii) Sunny recites a poem.

(iii) My teacher helps me in my studies.

(iv) The postman delivered him a parcel.

(f) Change the following into Indirect Speech :

(i) He said, "I can solve this difficult sum."

(ii) The teacher said, "Honesty is the best policy."

(iii) I said to him, "What are you reading these days ?"

(g) Insert comparative or superlative degree of the words given in the brackets :

(i) This book is.....(interesting) than the other one was.

(ii) Everest is the.....(high) mountain in the world.

(iii) This is the.....(thrilling) story I have ever read.

6. Write a Paragraph of about **150** words on any *one* of the following topics : **16**

(a) Role of computers in modern life

(b) A visit to an International Trade Fair

(c) Work is workship

(d) The most Exciting Day of your life.

Unit IV

7. Write an application to the Principal of an Engineering College for the post of a Computer Instructor giving complete detail of your academic and professional qualifications.

Roll No. ..... Total Pages : 02

BCA/D-17 1232

PROGRAMMING IN C

BCA-116

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. Attempt *four* more questions selecting *one* question from each Unit.

1. Fill in the blanks : **8×2=16**

(i) C is a.....level language.
(ii) Printf( ) is used for.....
(iii) IF-ELSE is used for.....
(iv) Switch is used for.....
(v) Recursion is.....
(vi) Continue is used for.....
(vii) Auto is.....
(viii) Extern is.....

Unit I

2. Explain various data types in C. **16**

3. Explain the following with example : **4×4=16**

(i) variable

(ii) scanf( )
(iii) getch( )
(iv) putch( )

Unit II

4. Explain various categories of operators in C language. **16**

5. Explain type casting and conversion with examples. **16**

Unit III

6. What are various looping constructs in C language ? Explain the difference between while and do-while looping constructs with examples. **16**

7. What is a function in C ? What is a function prototype ? Explain how parameters are passed between two functions ? **16**

Unit IV

8. What is the concept of storage class in C language ? Explain various storage classes available in C. **16**

9. What is an Array in C ? Explain its various types with examples. **16**

Roll No. ..... Total Pages : 03

BSIT/D-17 **12124**

COMMUNICATION SKILLS

BSIT-101 (Paper I)

Time : Three Hours] [Maximum Marks : 30

Note : Attempt all questions.

1. Answer the following questions :

(i) What do we mean by Communication ?

(ii) Define 'Teleprinter'.

(iii) What is Group Discussion ?

(iv) Write a short note on Camera.

Change the narration of the following sentences :

(v) She said to me, "I saw a stranger in the street."

(vi) She said to me, "Who teaches you English ?"

6×1=6

2. (a) Discuss in brief objectives of Communication.

Or

Discuss the significance of Communication. **3**

(b) Write short notes on any *two* :

(i) Informal Communication

(ii) Written Communication

(iii) Group discussion

(iv) Dictaphone. **1½×2=3**

3. (a) Write a detailed note on e-Mail.

Or

Write a short note on Pager. **3**

(b) Write short notes on any *two* :

(i) Minutes of meeting

(ii) Television

(iii) Circulars

(iv) Slide. **3**

4. (a) Fill in the blanks with appropriate articles :

(i) Sixty minutes make.....hour.

(ii) Life is not.....bed of roses.

(iii) Arjun is.....Dara Singh of our college.

3×½=1½

(b) Fill in the blanks with correct form of verb given in brackets :

(i) He.....till today (not come).

(ii) No sooner did I reach the station than the train.....(start)

(iii) He knew that I.....(pass). **3×½=1½**

(c) Change the voice of the following :

(i) This bottle contains ink.

(ii) She kept us waiting.

(iii) She has given me a message. **3×½=1½**

(d) Fill in the blanks with correct Modals :

(i) The case is serious, you.....consult the doctor.

(ii) How.....you insult me ?

(iii) .....you live long ! **3×½=1½**

5. Make a precis of the following passage and give a suitable title :

Good communication skills require a high level of self-awareness. Understanding your personal style of communicating will go a long way towards helping you to create a good and lasting impression on others. By becoming more aware of how others perceive you, you can adapt more readily to their styles of communicating. This doesn't mean you have to be chameleon, changing with every personality you meet. Instead you can make other person more comfortable with you by selecting and emphasising certain behaviours that fit within your personality and resonate with another. In doing this you will become an active and patient listener. We should use non-verbal behaviour to raise the channel of interpersonal communication. None-verbal communication is often referred to as body language, facial expressions like smiles, gestures, eye contact and even your posture. This shows the person you are communicating with that you are indeed listening actively and will prompt further communications while keeping costly, time consuming mis-understandings at a minimum. **6**

Unit V

9. (a) … that

$$\left(\ldots - y^2 + 2x\right)dx + 2y\,dy = 0$$

is not exact. 2

(b) Find the characteristic roots of the Matrix : 2

$$A = \begin{bmatrix} a & h & g \\ 0 & b & f \\ 0 & 0 & c \end{bmatrix}$$

(c) Find the rank of matrix : 2

$$A = \begin{bmatrix} 3 & 4 & 1 & 2 \\ 3 & 2 & 1 & 4 \\ 5 & 6 & 2 & 4 \end{bmatrix}$$

(d) Write Pigeon Hole principle. 2

Roll No. .... **Total Pages : 04**

BSIT/D-17 12125

MATHEMATICAL FOUNDATION FOR INFORMATION TECHNOLOGY-I

BSIT-102

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *five* questions in all, selecting *one* question from each Unit. Q. No. 9 of Unit V is compulsory.

Unit I

1. (a) Reduce the matrix

$$A = \begin{bmatrix} 1 & -1 & 2 & -1 \\ 4 & 2 & -1 & 2 \\ 2 & 2 & -2 & 0 \end{bmatrix}$$

to $[I_3, 0]$ Hence find rank of A. 4

(b) Express $A = \begin{bmatrix} 1 & 3 & 5 \\ -6 & 8 & 3 \\ -4 & 6 & 5 \end{bmatrix}$ as a sum of symmetric and skew symmetric matrix.

2. (a) Find eigen vectors of the matrix : 4

$$A = \begin{bmatrix} -2 & 2 & -3 \\ 2 & 1 & -6 \\ -1 & -2 & 0 \end{bmatrix}$$

(b) Diagonalize : 4

$$A = \begin{bmatrix} 1 & 0 & 3 \\ 0 & -2 & -2 \\ 3 & -2 & 3 \end{bmatrix}$$

Unit II

3. (a) Solve the differential equation : 4

$$x\frac{dy}{dx} - y = \sqrt{x^2 + y^2}$$

(b) Find the differential equation of the system of circles touching y axis at origin. 4

4. (a) Solve : 4

$$x^2 y dx - \left(x^3 + y^3\right) dy = 0$$

(b) Solve : 4

$$\left(1 + x^2\right)\frac{dy}{dx} + 2yx - 4x^2 = 0$$

Unit III

5. (a) Solve : 4

$$\frac{d^2y}{dx^2} + \frac{dy}{dx} + y = \sin 2x$$

(b) Solve : 4

$$x^2\frac{d^2y}{dx^2} - 2x\frac{dy}{dx} - 4y = x^4$$

6. (a) Prove that $2^{3n} - 1$ is divisible by 7 for all $n \in N$. 4

(b) Prove that : 4

$$A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$$

Unit IV

7. (a) If R is relation from N to N defined by (a, b) R (c, d) if and only if $ad = bc$, then show that R is an equivalence relation. 4

(b) Find the inverse of the function : 4

$$f(x) = 3x + 4 \ \forall x \in R$$

8. (a) Define partition of a set. Find partitions of the set $\{1, 2, 3\}$. 4

(b) Show that the relation R of divisibility (/) is a partial order relation on N. 4

Roll No. ..... Total Pages : 03

BSIT/D-17 **12126**

PHYSICS-I (EM THEORY)

BSIT-103

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Compulsory Question

1. (a) Give the meaning and unit of Poynting vector. **2**

(b) What is the difference between Gauss's divergence theorem and Stoke' theorem. **2**

(c) Determine the length of an antenna operating at a frequencies of 500 kHz. **2**

(d) Explain why radio horizon is at a greater distance then optical horizon. **2**

Unit I

2. (a) State Gauss's divergence theorem. Show that electric field can be expressed as negative of the gradient of the electric potential. **5**

(b) Explain the concept of displacement current. **3**

3. (a) Write Maxwell's equations in its differential form and give their physical significance. 4

(b) Explain the concepts of scalar and vector potentials. 4

Unit II

4. (a) What are gauge transformations ? Discuss the Coulomb gauge and Lorentz gauge with their importance. 6

(b) Write the relation for speed of electromagnetic waves in vacuum and for a dielectric medium. 2

5. (a) Derive the equation of plane electromagnetic wave in free space and find the intrinsic impedance of free space. 6

(b) Show that both $\vec{E}$ and $\vec{H}$ are perpendicular to each other and to the direction of propagation of wave. 2

Unit III

6. (a) Discuss the space wave propagation of electromagnetic waves. 6

(b) Determine the height of receiving antenna to obtain a maximum transmission distance of 48.7 km from a transmission antenna of height 40 m. 2

7. Explain the following terms as applied to sky wave propagation : 8

(i) Critical frequency

(ii) Vertual height

(iii) Maximum usable frequency

(iv) Skip distance and skip zone.

Unit IV

8. (a) What are different types of transmission lines ? Discuss the various types of losses occurring in a transmission line. 6

(b) Determine the characteristics impedance of a transmission line having L = 0.118 μH/ft. and C = 21 pF/ft. 2

9. (a) Discuss the resonant and non-resonant antennas along wtih their radiation pattern. 6

(b) Current of 5A at a frequency of 5 MHz flows through a Hertzian dipole of 30 m length. Calculate the field strength at a distance of 1 km at an angle of 90°C. 2

Roll No. ..... Total Pages : 04

BSIT/D-17 12127

DIGITAL ELECTRONICS-I

BSIT-104

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory.

1. (a) Explain radix of a number system.
   (b) What is a gray code ? Discuss its advantages over binary code.
   (c) Discuss application of Flip-Flop.
   (d) How a T Flip-flop can be used as a divide-by two device ? 2×4=8

Unit I

2. (a) Convert the following : 1½×3=4½

$$(1011.011)_{10} = (X)_2 = (Y)_8 = (Z)_{16}$$

   (b) Perform the following binary addition. 1½

11011101.101 + 110111 + 110110.01

Unit IV

8. (a) Draw the circuit diagram of a RS Flip-Flop using NOR gates and explain its operation. 4
   (b) Discuss the operation of a edge triggered JK Flip-flop. 4

9. (a) Discuss the operation of a Master-slave JK FF. 4
   (b) Draw and explain a D flip-flop with NAND Latch. 4

(c) Convert : 1+1=2

(i) $(100010111)_2$ to gray code.

(ii) Binary equivalent of the gray code number 101010101.

3. (a) Perform the following binary division : 2

$$(1101101)_2 \div (101)_2$$

(b) Perform the following in 8-bit system using 2's complement method : 2×3=6

(i) –49 – 26

(ii) 67 – 39

(iii) – 87 + 112.

Unit II

4. (a) Using the theorem of Boolean Algebra, prove the following :

(i) $(A + B)(A + \overline{A}\cdot\overline{B})\cdot C + \overline{\overline{A}(B + \overline{C})}$

$$\overline{A}\cdot B + A\cdot B\cdot C = A + B + C$$

(ii) $(A + A\cdot\overline{B})\cdot[A\cdot C + A\overline{C}(\overline{A} + B)]\cdot(B + C)$

$$= A\cdot B + A\cdot C$$

(b) Obtain the minimal Boolean function of the following using K-map :

(i) $F_1(A, B, C, D) = \Sigma(0, 2, 3, 5, 6, 7, 8, 9) + \sum_{\phi}(10, 11, 12, 13, 14, 15)$

(ii) $F_2(A, B, C, D) = \Sigma(2, 9, 10, 12, 13) \sum_{\phi}(1, 5, 14, 15)$

5. (a) Explain, how AND, OR, NOT gates can be realized using NAND gates alone. 2

(b) Using K-Map, obtain the minimal POS expression of the following and implement it with NOR gates only : 6

$$F(A, B, C, D) = \prod(1, 5, 6, 12, 13, 14)\cdot\prod_{\phi}(2+4).$$

Unit III

6. (a) What is a full adder ? Discuss the design of a full adder using NAND gates. 4

(b) Explain oepration of a 4 : 1 Multiplexer. Discuss the applications of multiplexer. 4

7. (a) What is a BCD to decimal decoder ? Draw its logic diagram and explain its working. 4

(b) What is a encoder ? Draw and explain the logic diagram of a Decimal to BCD encoder. 4

Roll No. .....

Total Pages : 03

BSIT/D-17

12128

ELECTRONICS COMMUNICATION

Paper I (BSIT-105)

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Why is Modulation necessary in Communication systems ?

(b) State the advantages and applications of pulse code modulation.

(c) Why are high carrier frequencies used for transmission ?

(d) What is companding and why is it required ?

2 each

Unit I

2. (a) What is Modulation ? Define amplitude modulation. Derive an expression to determine side band frequencies, band width and frequency spectrum of A.M. Wave. 5

(b) A carrier wave of 500 watts is subjected to 50% amplitude modulation. Determine :

(i) Power of modulated wave

(ii) Power of side bands.

3. (a) What is demodulator ? Draw the linear diode detector circuit for A.M. and explain its action with neat waveform sketch. 4

(b) In an FM systems the frequency deviation is 10 kHz when the audio modulating frequency is 800 Hz and the audio modulating voltage is 4V. Calculate the modulation index. Also calculate the frequency deviation if AF voltage is increased to 8V while the modulation frequency is reduced to 400 Hz. 4

Unit II

4. (a) What is Pulse Modulation ? Describe different types of Pulse Amplitude Modulation (PAM) in detail. 4

(b) Describe Sampling theorem for Band-Pass signals. 4

5. Write short notes on the following :

(i) Quantization of signals

(ii) Sampling rate

(iii) Natural Sampling. 3,3,2

Unit III

6. (a) What do you understand by Pulse Code Modulation (PCM) ? Explain why PCM is more noise-resistant than the other forms of pulse-modulation. 4

(b) Draw the block-diagram of PCM transmitter and explain its working. 4

7. (a) Describe the method of generation of Delta-modulation. 4

(b) What is Delta-Modulation ? Compare Delta modulation with PCM. 4

Unit IV

8. (a) What is Digital Communication ? Give different characteristics of digital communication system. 4

(b) Discuss the band width requirements in a digital communication system. How does it influence the transmission rate ? 4

9. (a) What is cross talk ? How do we minimize it ? What is the use of echo-supressors ? 4

(b) What is Echo-concellers device ? What is its use in digital communication system ? 4

Roll No. ..... Total Pages : 02

BSIT/D-17 12129

COMPUTER FUNDAMENTALS

BSIT-106

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory.

1. (a) Name *four* hardware and *four* software.
(b) Define hardware and software.
(c) Write *four* characteristics of Computer.
(d) Write a note on Third Generation Computers.

Unit I

2. Define block diagram of a computer and explain major parts. **8**

3. (a) Write a note on Supercomputers.
(b) Write a note on fourth generation computers. **8**

Unit II

4. (a) Writing working of Magnetic Disk.
(b) Differentiate between Primary and Secondary Memory. **8**

5. (a) Discuss Cache Memory and its use.
(b) Write a note on Magnetic bubble memory. **8**

Unit III

6. (a) Define System Software and Application Software.
(b) Discuss firmware and middle ware. **8**

7. Explain development steps of a software. **8**

Unit IV

8. Discuss Desktop and explain any *three* accessories. **8**

9. In context of Word, discuss :
(a) formatting text
(b) use of Macros. **8**

Roll No. ..... Total Pages : 3

BSE/D-17 **16502**

LITERATURE IN ENGLISH (1550-1660)

Paper : II

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Question No. 1, Question No. 5(a) and Question No. 5(b) are compulsory. Attempt any *two* questions from Section-B.

SECTION–A

1. Explain with reference to the context any *three* of the passage given below.

(a) Sure, if that long with Love acquainted eyes
Can judge of Love, thou feel'st a lover's case;
I read it in thy looks; thy languish'd grace
To me that feel the like, thy state descries.

(b) As virtuous men pass mildly away,
And whisper to their souls, to go,
Whilst some of their sad friends do say,
The breath goes now, and some say, no.

(c) I have seen roses damask'd, red and white,
But no such roses see I in her cheeks,
And in some perfumes is there more delight.
Than in the breath that from my mistress reeks.

(d) My face in thine eye, thine in mine appears,

And true plain hearts do in the faces rest,

Where can we find two better hemispheres

Without sharp north, Without declining west ?

Whatever dies, was not mixed equally;

If our two loves be one, or, thou and I

Love so alike, that none do slacken, none can die.

(3×8=24)

SECTION–B

Note : Attempt any *two* questions from this section.

2. Discuss Sir Philip Sidney as a Sonneteer with reference to his sonnets prescribed in your syllabus.

3. The theme of friendship finds a mature expression in Shakespeare's sonnets. Elaborate with particular reference to the sonnets in your syllabus.

4. What is meant by metaphysical poetry ? Illustrate Donne's use of metaphysical imagery from his poems that you have read. (2×14=28)

SECTION–C

5. (a) Write a note in about 400 words on any *two* of the authors given below :

(i) Francis Bacon.

(ii) John Webster.

(iii) Ben Jonson. (2×6½=13)

(b) Write a note in about 200 words each on any *three* of the literacy works given below :

(i) Shakespeare – Othello.

(ii) Norton and Sackville – Gordobuc.

(iii) Robert Burton – the Anatomy of Melancholy.

(iv) Sir Thomas Browne – Religio Medici. (3×5=15)

Roll No. .....

Total Pages : 3

BSE/D-17

16524

SANSKRIT

(Kadambri Vasavdutta Cha)

Paper–II

Opt. (i)

Time : Three Hours]

[Maximum Marks : 80

नोट : सभी प्रश्न अनिवार्य हैं।

1. निम्नलिखित प्रश्नों के उत्तर दीजिए :

(क) तारापीड के पुत्र का क्या नाम है?

(ख) शुकनास कौन है?

(ग) लक्ष्मी ने कौस्तुभ मणि से कौन-सा गुण ग्रहण किया?

(घ) बाणभट्ट की मुख्य रचना का क्या नाम है?

(ङ) 'वासवदत्ता' काव्य की किस विधा के अन्तर्गत आता है?

(च) वासवदत्ता कौन है?

(छ) मकरन्द कौन है?

(ज) 'वासवदत्ता' नामक ग्रन्थ में किस अलंकार का प्रयोग हुआ है?

(8×2=16)

2. किन्हीं **दो** गद्यांशों का सप्रसंग अनुवाद कीजिए :

(क) मनसा देवताध्यारोपण-विप्रतारणाद् असद्भूत-संभावनोपहताश्चान्तः प्रविष्टापरभुजद्वयमिवात्मबाहुयुगलं संभावयन्ति। त्वगन्तरित तृतीयलोचनं स्वललाटमाशंकन्ते। दर्शनप्रदानमप्यनुग्रहं गणयन्ति। दृष्टिपातमप्यु पकारपक्षे स्थापयन्ति। सम्भाषणमपि संविभागमध्ये कुर्वन्ति। स्पर्शमपि पावनमाकलयन्ति।

(ख) अभिषेकानन्तरं च प्रारब्धदिग्विजयः परिभ्रमन् विजितामपि तव पित्रा सप्तद्वीपभूषणां पुनर्विजयस्व वसुन्धराम्। अयं च ते कालः प्रतापमारोपयितुम्। आरूढप्रतापो राजा त्रैलोक्यदर्शीव सिद्धादेशो भवति इत्येतावद् अभिधायोपशशाम। उपशान्तवचसि शुकनासे चन्द्रापीडस्ताभिरूपदेशवाग्भिः प्रक्षालितः इव, उन्मीलित इव, स्वच्छीकृत इव, निमृष्ट इव, अभिषिक्त इव, अभिलिप्त इव, अलंकृत इव, पवित्रीकृत इव, उद्भासित इव, प्रीतहृदयो मुहूर्तं स्थित्वा स्वभवनमाजगाम।

(ग) भवादृशा एव भवन्ति भाजनान्युपदेशानाम्। अपगतमले हि मनसि स्फटिकमणाविव रजनीकरगभस्तयो विशन्ति सुखेनोपदेशगुणाः। गुरुवचनममलमपिसलिलमिव महदुपजनयति श्रवणस्थितं शूलमभव्यस्य। इतरस्य तु करिण इव शंखाभरणमाननशोभासमुदयमधिकतरमुपजनयति। हरत्यतिमलिनमन्धकारमिव दोषजातं प्रदोषसमुदये निशाकर इव गुरुपदेशः प्रशमहेतुर्वयः परिणाम इव पलितरूपेण शिरसिजजालमलीकुर्वन् गुणरूपेण तदेव परिणमयति। अयमेव अनास्वादितविषयरसस्य ते काल उपदेशस्य।

(2×8=16)

3. 'शुकनासोपदेश' के आधार पर लक्ष्मी की विशेषताओं का वर्णन कीजिए।

अथवा

बाणभट्ट की शैली वर्णित कीजिए। (1×16=16)

4. किन्हीं **दो** गद्यांशों की सप्रसंग व्याख्या कीजिए :

(क) वयस्य ! दितिरिव शतमन्युसमाकुला भवत्यस्मादृशजनचित्तवृत्तिः। नायमुपदेशकालः। पच्यन्त इव मेऽङ्गानि। कृष्यन्त इवेन्द्रियाणि। भिद्यन्त इव मर्माणि। निस्सरन्तीव प्राणाः। उन्मूल्यन्त इव विवेकाः।

नष्टेव स्मृतिः। अधुना तदलमनया कथया। यदि त्वं सहयांसुक्रीडा-समदुःखसुखोऽसि तन्मया सममागम्यतामित्युक्त्वा परिजनालक्षित एव तेन सह पुरान्निर्जगाम।

(ख) सखे ! किमिदमसाम्प्रतमसाधुजनोचितमध्वानमाश्रितोऽसि। तवैतच्चरितमालोक्य वितर्कदोलासु निवसन्ति सन्तः। खला पुनस्त्वदनुचितमनिष्टमाचरन्ति। अनिष्टोद्भावनरसोत्तरं हि भवति खलहृदयम्। को नामाऽस्य तत्त्वनिरूपणे समर्थः। तथाहि-भीमो, नबकहबेषी, आश्रयाशोऽपि मातरिश्वा, अतिकटुरपि महारसः, सर्षपस्नेह इव करयुगलालितोऽपि शिरसा धृतोऽपि न कटुत्वं जहाति।

(ग) चपले चित्रलेखे ! चित्रपटे विलिख चित्तचोरं जनम्। भाविनि विलासवति। विक्षिपावयवेषु मुक्ताचूर्णनिदानम्। रागिणि रागलेखे ! स्थगय नलिनीदलनिचयेन पयोधरभारम्। सुकान्ते कान्तिमति ! मन्दं मन्दमयनम वाष्पबिन्दून्। यूथिकालङ्कृते यूथिके! संचारय नलिनीदलतालवृन्तेनार्द्रवातान्। एहि भगवति निद्रे ! अनुगृहाण माम् धिक्, इन्द्रियैरपरैः, किमिति लोचनमयान्येव न कृतान्यंगानि विधिना।

5. 'वासवदत्ता' का चरित्र-चित्रण वर्णित कीजिए।

अथवा

सुबन्धु की रचना-शैली वर्णित कीजिए। (1×16=16)

Roll No. ..... Total Pages : 3

BSE/D-17 **16525**

POLITICAL SCIENCE
(Indian Constitution)
Paper: (I)
Opt : (i)

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all, selecting *one* question from each unit. Question No. 1 (short answers) is compulsory.

नोट : प्रत्येक इकाई से **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए। प्रश्न संख्या 1 (लघूत्तरीय) अनिवार्य है। सभी प्रश्नों के अंक समान हैं।

Compulsory Question
(अनिवार्य प्रश्न)

1. (a) What was the main function of Constituent Assembly?
संविधान सभा का क्या मुख्य कार्य था ?

(b) Give the name of *two* persons who enacted constitution.
संविधान के निर्माण में किन्हीं **दो** व्यक्तियों के नाम लिखो।

(c) What do you mean by fundamental duties ?
मौलिक कर्तव्यों का क्या अर्थ है ?

(d) What do you mean by joint electorate system?
संयुक्त चुनाव प्रणाली का क्या अर्थ है ?

(e) Explain *two* powers of Vice-President of India.
उपराष्ट्रपति की **दो** शक्तियों का वर्णन करें।

(f) Write two causes responsible for the downfall of Parliament.
संसद के पतन के दो कारण लिखें।

(g) What are the *two* constitutional independent Agencies
संविधान की किन्हीं **दो** स्वतन्त्र संस्थाओं के नाम लिखें।

(h) What is Defection ? (8×2=16)
दल बदल किसे कहते हैं ?

UNIT–I (इकाई–I)

2. Explain the preamble of Indian Constitution. 16
भारतीय संविधान की प्रस्तावना का वर्णन करें।

3. Explain fundamental rights.
मौलिक अधिकारों का वर्णन करें।

OR (अथवा)

Explain the meaning, aims and types of directive principles of state policy. 16
राज्यनीति के निर्देशक सिद्धान्तों का अर्थ, उद्देश्य व प्रकारों का वर्णन करें।

UNIT–II (इकाई–II)

4. Explain the appointment and powers of Prime Minister of India. 16
भारत के प्रधानमन्त्री की नियुक्ति व शक्तियों का वर्णन करें।

5. Explain the appointment and powers of Governor. 16
राज्यपाल की नियुक्ति व शक्तियों का वर्णन करें।

UNIT–III (इकाई–III)

6. Explain the composition and powers of Parliament. 16
संसद की रचना व शक्तियों का वर्णन करें।

7. Critically examine the amendment procedure of Indian Constitution. 16
भारतीय संविधान में संशोधन प्रक्रिया का आलोचनात्मक वर्णन करें।

UNIT–IV (इकाई–IV)

8. Explain the composition and powers of High Court. 16
उच्च न्यायालय की रचना व शक्तियों का वर्णन करें।

9. Write the provisions for protecting the independence of Judiciary in Indian Constitution. 16
न्यायपालिका के स्वतन्त्रता व सुरक्षा के लिए किए गए संविधान में प्रावधानों का वर्णन करें।

गार्नर के अनुसार प्रभुसता की कितनी विशेषताएं हैं?

(अ) दो

(ब) चार

(स) छः

(द) आठ।

(h) "Rule of Law" is unique features of :

(i) China Constitution

(ii) English Constitution

(iii) North Korea Constitution

(iv) Indian Constitution. 8×2=16

कानून का शासन एक विशेषता है :

(अ) चीन का संविधान

(ब) इंग्लिश संविधान

(स) उत्तर कोरिया का संविधान

(द) भारत का संविधान।

Roll No. .....

Total Pages : 6

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BSE/D-17

POLITICAL SCIENCE

(Principles of Political Science)

Paper–II

Time : Three Hours] [Maximum Marks : 80

Note : Attempt any *five* questions. All questions carry equal marks.

नोट : किन्हीं **पाँच** प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. Discuss meaning, nature and scope of political science. 16

राजनीति विज्ञान का अर्थ, प्रकृति एवं महत्त्व का वर्णन कीजिए।

2. Discuss the relations between Political Science and History. 16

राजनीति विज्ञान तथा इतिहास के मध्य सम्बन्धों का वर्णन कीजिए।

3. Define state. definition and its relation with other organisation. 16

राज्य, इसकी परिभाषाएं एवं दूसरे संगठन के साथ इसके सम्बन्धों पर चर्चा कीजिए।

4. Discuss the social contract theory about the origin of state. 16

राज्य की उत्पत्ति के सम्बन्ध में सामाजिक समझौते के सिद्धान्त का उल्लेख कीजिए।

5. Through light on the Pluralist Approach of sovereignty. Discuss its features also. 16

प्रभुसत्ता की बहुलवादी अवधारणा पर प्रकाश डालें, इसकी विशेषताएं भी बताएं।।

6. What do you mean by Welfare state ? Its features and criticism. 16

लोक कल्याणकारी राज्य से आपका क्या अभिप्राय है? इसकी विशेषताओं एवं आलोचनाओं का उल्लेख कीजिए।

7. Which are the main organs of Government ? Discuss the function of any *one*. 16

सरकार के मुख्य अंग कौन से हैं? किसी **एक** अंग के कार्यों का उल्लेख कीजिए।

8. Highlight meaning, merits and demerits of Pressure group. 16

दबाव समूह का अर्थ एवं गुण व दोषों का उल्लेख कीजिए।

9. Objective types questions.

वस्तुनिष्ठ प्रश्न।

(a) Political science is not a science. Who said ?

(i) Bryce

(ii) Pollock

(iii) Buckle

(iv) Gilchrist.

राजनीति विज्ञान, विज्ञान नहीं है। यह कथन किसका था?

(अ) ब्राइस

(ब) पोलक

(स) बकल

(द) गिलक्रिस्ट।

(b) Who define "Divine Theory" first time ?

(i) Louis XIV

(ii) Laski

(iii) James-I

(iv) Luther.

दैवीय सिद्धान्त का प्रतिपादन सबसे पहले किसने किया ?

(अ) लुई चतुर्दश

(ब) लास्की

(स) जेम्स प्रथम

(द) लूथर।

(c) All powers are powers of God, who said ?

(i) Bodin

(ii) Sant Paul

(iii) Austin

(iv) Hobbes.

सब शक्तियाँ ईश्वर की शक्तियाँ हैं, यह कथन किसका है?

(अ) बोदिन

(ब) सेन्ट पाल

(स) आस्टिन

(द) हॉब्स।

(d) "I am the state" is Associated with :

(i) Laski

(ii) Louis XIV

(iii) Austin

(iv) Hobbes.

''मैं ही राज्य हूँ'' किससे सम्बन्धित है :

(अ) लास्की

(ब) लुई चतुर्दश

(स) आस्टिन

(द) हॉब्स।

(e) John Lock is supporter of which theory of state ?

(i) Divine

(ii) Social contract

(iii) Evolutionary

(iv) Class struggle.

जान लॉक राज्य की उत्पत्ति के किस सिद्धान्त के समर्थक हैं?

(अ) दैवीय

(ब) सामाजिक समझौता

(स) विकासवादी

(द) वर्ग संघर्ष।

(f) Who criticize Principle of Sovereignty given by Austin ?

(i) Karl Mark's

(ii) Hobbes

(iii) Sir Hanery Man

(iv) Bodin.

आस्टिन के सम्प्रभुता सिद्धान्त की आलोचना किसने की?

(अ) कार्ल मार्क्स

(ब) हाब्स

(स) सर हैनरी मैन

(द) बोदिन।

(g) According to Garner how many features are of Sovereignty ?

(i) Two

(ii) Four

(iii) Six

(iv) Eight.