(b) Develop one dialogue-based paragraph consisting of about 20 exchanges on the situation given below : Making enquiries

Or

Escorting the chief guest. **12**

Roll No. ..... **Total Pages : 04**

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ENGLISH

Time : Three Hours Maximum Marks : 80

Note : Attempt all questions.

1. Explain with reference to the context :

If you can look into the seeds of time,
And say which grain will grow, and which will not,
Speak then to me, who neither beg, nor fear
Your favours nor your hate.

Or

Bleed, bleed, poor country !
Great tyranny, lay thou thy basis sure,
For goodness dare not check thee! Wear thou thy wrongs;
The title is affeer'd!

2. Answer any *four* of the following questions in about **150** words each : **8**
   (i) How does Macbeth get the title of the Thane of Cawdor ?
   (ii) What do the witches represent in the play ?
   (iii) Describe 'The Drunken Porter' scene.

(iv) What happened while Macbeth was waiting for his wife's signal on the night of Duncan's murder ?

(v) How can you say that Banquo is not completely noble and honest ?

(vi) Describe the Banquet scene when the ghost of Banquo appears. 4×5=20

3. Attempt a character-sketch of Macbeth.

Or

Critically analyse the plot-construction in Shakespeare's play, '*Macbeth*'. 10

4. Write an essay in about **400** words on any *one* of the following topics :

(i) Money is a good servant but a bad master

(ii) Status of Women

(iii) Dignity of Labour

(iv) Global Warming 15

5. Translate into English :

बातचीत एक ऐसी कला है जिसे कुछ [illegible] से बचकर सीखा जा सकता है। बहुत अधिक बोलना इनमें से एक है। कुछ लोग बातचीत पर एकाधिकार कर लेते हैं और दूसरों को बोलने का अवसर नहीं देते। कुछ लोग सदा [illegible] में बोलते रहते हैं। वे सदा अपनी उपलब्धियों, दुर्भाग्य और बीमारियों के विषय में बोलने को तत्पर रहते हैं। कोई भी उनकी असफलताओं और सफलताओं में रुचि नहीं [illegible] बातचीत को [illegible] और मनोरंजक बनाने का [illegible] को भी अपनी बातचीत में सक्रिय भाग [illegible]। अपनी बातचीत में हमें दूसरों [illegible] का मज़ाक उड़ाने का यत्न नहीं [illegible] की कीमत पर ही [illegible] दूसरों की [illegible] को चोट [illegible] 10

6. [illegible] students)

[illegible] following in about **250** words :

(i) Corruption

(ii) Ban on Smoking

(iii) Live in Deeds, Not in Years

6. Give one word substitution for any *five* of the following expressions :

(i) The original inhabitants of the country

(ii) Government by one person

(iii) One who loves and collects books

(iv) An officer to whom no salary is paid

(v) A disease which spreads by contact

(vi) A medicine that induces sleep

(vii) Walking in sleep. 5

(ii) शीर्षक की संरचना पर प्रकाश डालिए ।

(iii) एक अच्छे फीचर की विशेषताओं पर प्रकाश डालिए ।

(iv) स्वतंत्र प्रेस की अवधारणा स्पष्ट कीजिए ।

खण्ड 'घ'

7. निम्नलिखित **दस** वस्तुनिष्ठ प्रश्नों के उत्तर दीजिए : $10 \times 1 = 10$

(i) 'बालमुकुंद गुप्त ग्रन्थावली' कब प्रकाशित हुई ?

(ii) आचार्य रामचंद्र शुक्ल का जन्म कब हुआ ?

(iii) महादेवी वर्मा को ज्ञानपीठ पुरस्कार किस रचना पर प्राप्त हुआ था ?

(iv) आचार्य हजारी प्रसाद द्विवेदी राज भाषा आयोग के सदस्य कब नियुक्त किए गए ?

(v) भारत सरकार ने विद्यानिवास मिश्र जी को किस उपाधि से अलंकृत किया था ?

(vi) राहुल सांकृत्यायन का मूल नाम क्या था ?

(vii) 'डब डब भर आय नैन' उपन्यास के लेखक कौन हैं ?

(viii) भारत में प्रेस पर किस वर्ष आपातकाल के समय सेंसर लगाया गया था ?

(ix) अकबर के नवरत्नों में हरियाणवी कौन थे ?

(x) शंभु का पूरा नाम क्या है ?

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HINDI (Compulsory)

Time : Three Hours] [Maximum Marks : 80

नोट : सभी प्रश्न अनिवार्य हैं ।

खण्ड 'क'

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

(क) युद्ध के अतिरिक्त संसार में और भी ऐसी विकट काम होते हैं जिनमें घोर शारीरिक कष्ट सहना पड़ता है और प्राण-हानि तक की संभावना रहती है । अनुसधान के लिए तुषार-मंडित अभ्रभेदी अगम्य पर्वतों की चढ़ाई, ध्रुव-देश या सहारा के रेगिस्तान का सफर, क्रूर-बर्बर जातियों के बीच अज्ञात घोर जंगलों में प्रवेश इत्यादि भी पूरी वीरता और पराक्रम के कर्म हैं ।

अथवा

पागल का लगना एक का लगना होता है, कवि का लगना सबको लगने लगता है । बात उलटकर कही जाए तो इस प्रकार होगी जिसका लगना सबको लगे वह कवि है, जिसका लगना सिर्फ उसे ही लगे, औरों को नहीं, वह पागल है । लगने लगने में भी भेद है । जो सबको लगे वह अर्थ है, जो एक को ही लगे, वह अनर्थ है । अर्थ सामाजिक होता है ।

(ख) भ्रष्टाचार मिटाने के लिए महाराज को व्यवस्था में बहुत परिवर्तन करने होंगे। एक तो भ्रष्टाचार के मौके मिटाने होंगे। जैसे ठेका है तो ठेकेदार है। और ठेकेदार है तो अधिकारियों को घूस है। ठेका मिट जाए तो उसकी घूस मिट जाए। इसी तरह और बहुत सी चीज है। कि कहाँ से आदमी घूस लेता है, यह भी विचारणीय है।

अथवा

यह देश भी यदि विलायत की भाँति स्वतंत्र होता और यहाँ के लोग ही यहाँ के राजा होते तब यदि अपने देश के लोगों को यहाँ के लोगों से अधिक सच्चा साबित कर सकते तो आपको अवश्य कुछ बहादुरी होती। स्मरण करिये, उन दिनों को कि जब अंग्रेजों के देश पर विदेशियों का अधिकार था। उस समय आपके स्वदेशियों की नैतिक दशा कैसी थी: उसका विचार तो कीजिए। 7×2=14

2. निम्नलिखित दो आलोचनात्मक प्रश्नों में से **एक** का उत्तर दीजिए :

(i) बालमुकुंद गुप्त का साहित्यिक परिचय दीजिए।

(ii) विद्यानिवास मिश्र की निबंध कला पर प्रकाश डालिए। 10

3. निम्नलिखित छः लघूत्तरीय प्रश्नों में से किन्हीं **चार** को **150-150** शब्दों में उत्तर दीजिए : 4×4=16

(i) 'आशा का अंत' निबंध का सार लिखिए।

(ii) आचार्य रामचंद्र शुक्ल की निबंध कला पर प्रकाश डालिए।

(iii) महादेवी वर्मा के संस्मरण की भाषा शैली पर प्रकाश डालिए।

(iv) 'देवदारु' निबंध का सार लिखिए।

(v) हरिशंकर परसाई का साहित्यिक परिचय दीजिए।

(vi) राहुल सांकृत्यायन की यात्रा-वृतान्त कला पर प्रकाश डालिए।

खण्ड 'ख'

4. निम्नलिखित दो आलोचनात्मक प्रश्नों में से **एक** का उत्तर दीजिए : 10

(i) हरियाणवी भाषा के उद्भव और विकास को स्पष्ट कीजिए।

(ii) हरियाणा की लोक परम्परा के उद्भव और विकास को स्पष्ट कीजिए।

5. निम्नलिखित चार लघूत्तरीय प्रश्नों में से किन्हीं **दो** को **150-150** शब्दों में उत्तर दीजिए : 5×2=10

(i) हरियाणवी भाषा की प्रमुख बोलियों का विवेचन कीजिए।

(ii) हरियाणवी उपन्यास साहित्य की विवेचना कीजिए।

(iii) हरियाणवी कविता का सामान्य परिचय दीजिए।

(iv) अहमद बख्श की भाषा पर प्रकाश डालिए।

खण्ड 'ग'

6. निम्नलिखित चार लघूत्तरीय प्रश्नों में से किन्हीं **दो** का उत्तर दीजिए : 5×2=10

(i) पत्रकारिता के स्वरूप को स्पष्ट कीजिए।

Roll No. ..... Total Pages : 05

GSQ/M-16 1782

PANJABI (Elective)

(For Fresh Candidates Only)

Time : Three Hours] [Maximum Marks : 80

I. ਕਿਸੇ ਇੱਕ ਦੇ ਜੀਵਨ ਤੇ ਰਚਨਾ ਸੰਸਾਰ ਨੂੰ ਚਰਚਾ ਦਾ ਵਿਸ਼ਾ ਬਣਾਉ :-

(ੳ) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਸਾਹਿਬ ਜੀ ਮਹਾਰਾਜ

(ਅ) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ ਮਹਾਰਾਜ

II. ਕਿਸੇ ਦੋ ਕਾਵਿ-ਟੋਟਿਆਂ ਦੀ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ ਕਰੋ :-

(ੳ) ਗਰਬੁ ਕਰਤੁ ਹੈ ਦੇਹ ਕੋ ਬਿਨਸੈ ਛਿਨ ਮੈ ਮੀਤ ॥
ਜਿਹਿ ਪ੍ਰਾਨੀ ਹਰਿ ਜਸੁ ਕਹਿਓ ਨਾਨਕ ਤਿਹਿ ਜਗੁ ਜੀਤਿ ॥

(ਅ) ਸਾਹਿਬਾ ਗਈ ਤੇਲ ਨੂੰ, ਗਈ ਪਸਾਰੀ ਦੀ ਹਾਂਟ।
ਫੜ ਨਾ ਜਾਣੇ ਤਾਂਕੜੀ, ਹਾੜ ਨਾ ਜਾਣੇ ਵਾਂਟ।

(ੲ) ਇਕ ਦਿਨ ਤੈਨੂੰ ਸੁਪਨਾ ਥੀਸਣ, ਗਲੀਆਂ ਸਾਵਣ ਵਾਲੀਆਂ ਵੇ ॥ਰਹਾਉ॥
ਉਡਿ ਗਏ ਭੌਰ ਫੁਲਾਂ ਦੇ ਕੋਲੋਂ, ਸਣ ਪਤੰਗ ਸਣ ਡਾਲੀਆਂ॥
ਜਿਤ ਤਨੁ ਲਗੀ ਸੋਈ ਤਨਿ ਜਾਣੇ, ਹੋਰ ਗਲਾਂ ਕਰਨ ਸੁਖਾਲੀਆਂ॥

(ਸ) ਕਿਰਪਾ ਕਰੇ ਜਿਸੁ ਪਾਰਬ੍ਰਹਮੁ ਹੋਵੈ ਸਾਧੂ ਸੰਗੁ ॥
ਜਿਉ ਜਿਉ ਓਹੁ ਵਧਾਈਐ ਤਿਉ ਤਿਉ ਹਰਿ ਸਿਉ ਰੰਗੁ ॥
ਦੁਹਾ ਸਿਰਿਆ ਕਾ ਖਸਮੁ ਆਪਿ ਅਵਰੁ ਨ ਦੂਜਾ ਥਾਉ ॥
ਸਤਿਗੁਰ ਤੁਠੈ ਪਾਇਆ ਨਾਨਕ ਸਚਾ ਨਾਉ ॥੯॥

III. ਹੇਠ ਲਿਖਿਆਂ ਵਿ'ਚੋਂ <u>ਕਿਸੇ ਇ'ਕ</u> ਕਾਲ ਦੇ ਪੰਜਾਬੀ ਸਾਹਿਤ ਉੱਪਰ ਚਰਚਾ ਕਰੋ :-

(i) ਪੂਰਵ ਨਾਨਕਕਾਲ

(ii) ਗੁਰੂ ਨਾਨਕਕਾਲ

IV. ਹੇਠ ਲਿਖੇ ਸਾਹਿਤ-ਰੂਪਾਂ ਵਿ'ਚੋਂ <u>ਕਿਸੇ ਦੋ</u> ਨੂੰ ਉਦਾਹਰਣਾਂ ਦੇ ਕੇ ਪਰਿਭਾਸ਼ਤ ਕਰੋ :-

(i) ਨਿ'ਕੀ ਕਹਾਣੀ

(ii) ਇਕਾਂਗੀ

(iii) ਰੇਖਾ ਚਿ'ਤਰ

(iv) ਸੈ-ਜੀਵਨੀ

V. ਹੇਠ ਲਿਖੇ ਵਾਰਤਕ ਦਾ ਹਿੰਦੀ ਭਾਸ਼ਾ ਵਿ'ਚ ਅਨੁਵਾਦ ਕਰੋ :-

ਹੁਣ ਇ'ਕ ਮੋਬਾਈਲ ਦੀ ਮਦਦ ਨਾਲ ਮਾਤਾ-ਪਿਤਾ ਆਪਣੇ ਬ'ਚਿਆਂ ਦੇ ਮੋਬਾਈਲ ਫੋਨ ਨੂੰ ਕੰਟਰੋਲ ਕਰ ਸਕਣਗੇ, ਉਹ ਉਨ੍ਹਾਂ ਦੇ ਮੋਬਾਈਲ ਫੋਨਾਂ ਉੱਤੇ ਆਉਣ ਵਾਲੇ ਸੰਦੇਸ਼ ਪੜ੍ਹ ਸਕਣਗੇ, ਉਨ੍ਹਾਂ ਦੇ ਕਾਲ-ਲਾਗ ਵਿ'ਚ ਜਾ ਕੇ ਇਹ ਵੀ ਦੇਖ ਸਕਣਗੇ ਕਿ ਉਹ ਕਿਸ ਨੂੰ ਫੋਨ ਕਰ ਰਹੇ ਹਨ। ਫਿਲਹਾਲ ਇਹ ਸੁਹਲਤ ਅਮਰੀਕੀ-ਕੰਪਨੀ ਬੈਮਿਲੇ ਨੇ ਵੋਡਾਫੋਨ ਲਈ ਅਮਰੀਕਾ ਵਿ'ਚ ਹੀ ਸ਼ੁਰੂ ਕੀਤੀ ਹੈ, ਬੈਮਿਲੇ ਦੇ ਸਾਇਟ ਉੱਤੇ ਮਾਤਾ-ਪਿਤਾ ਨੂੰ ਆਪਣੇ ਬ'ਚਿਆਂ ਦਾ ਮੋਬਾਈਲ ਨੰਬਰ ਪਾਉਣਾ ਪਵੇਗਾ, ਇਸ ਤੋਂ ਪਿ'ਛੋਂ ਉਹ ਉਸ ਨੰਬਰ ਦੀ ਹਰ ਹਰਕਤ ਉੱਪਰ ਨਜ਼ਰ ਰ'ਖ ਸਕਣਗੇ।

VI. ਹੇਠ ਲਿਖੇ ਵਾਕਾਂ ਦੇ ਵਚਨ ਬਦਲੋ :-

(i) ਸਿਮਰਨ ਚਿ'ਠੀ ਲਿਖਦੀ ਹੈ, ਕਵਿਤਾ ਨਹੀਂ।

(ii) ਪੁਲਿਸ ਚੋਰ ਨੂੰ ਫੜ ਰਹੀ ਸੀ ਜਾਂ ਖਿਡਾਰੀ ਨੂੰ।

(iii) ਮੈਂ ਉਸ ਨਾਲ ਇੰਸਾਫ ਕਰਨਾ ਚਾਹਾਂਗਾ।

(iv) ਮੈਂ ਹਨੇਰੇ ਵਿ'ਚ ਨਹੀਂ ਤੁਰ ਸਕਦਾ।

(v) ਫੁ'ਲ ਬਹੁਤ ਸੁਹਣਾ ਹੈ।

VII. ਹੇਠ ਲਿਖਿਆਂ ਦੇ ਲਿੰਗ ਬਦਲੋ :-

(i) ਉਹ ਸਾਰੇ ਹੀ ਫੁ'ਟਬਾਲ ਖੇਡਦੇ ਹਨ।

(ii) ਹਰ ਬੰਦੇ ਲਈ ਪੜਨਾ ਜਰੂਰੀ ਹੈ।

(iii) ਉਹ ਆਪਣਾ ਅਤੇ ਆਪਣੇ ਪਿਤਾ ਦਾ ਹਾਲ-ਚਾਲ ਦ'ਸ ਰਿਹਾ ਸੀ।

(iv) ਸਾਡੀ ਇ'ਛਾ ਸੀ ਕਿ ਤੂੰ ਪੰਜ ਮਿੰਟ ਪਹਿਲਾਂ ਪੁ'ਜ ਜਾਂਦਾ।

(v) ਜਦੋਂ ਬ'ਨਿਆਂ ਨੇ ਹਾਥੀ ਵੇਖਿਆ ਤਾਂ ਤਾੜੀਆਂ ਮਾਰਨ ਲ'ਗ ਪਏ।

VIII. ਹੇਠ ਲਿਖੇ ਲਘੂ **ਉੱਤਰਾਂ ਵਾਲੇ** ਪ੍ਰਸ਼ਨਾਂ ਦੇ <u>ਚਾਰ</u> ਵਿਕਲਪ ਦਿ'ਤੇ ਹੋਏ ਹਨ, ਹਰੇਕ ਵਿ'ਚ ਠੀਕ ਵਿਕਲਪ ਲਿਖੋ :-

(i) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ ਮਹਾਰਾਜ ਨੇ ਕਿੰਨੇ ਰਾਗਾਂ ਵਿ'ਚ ਬਾਣੀ ਰਚੀ ਹੈ ?

(a) 19

(b) 20

(c) 21

(d) 22

(ii) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਜੀ ਮਹਾਰਾਜ ਦੀ ਸੰਪਾਦਨਾ ਕਦੋਂ ਹੋਈ ?

(a) 1602 ਈ:

(b) 1603 ਈ:

(c) 1604 ਈ:

(d) 1605 ਈ:

(iii) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਸਾਹਿਬ ਜੀ ਮਹਾਰਾਜ ਦੀ ਬਾਣੀ ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਗ੍ਰੰਥ ਸਾਹਿਬ ਜੀ ਮਹਾਰਾਜ ਵਿੱਚ ਕਿਸ ਨੇ ਦਰਜ ਕਰਵਾਈ ?

(a) ਬੰਦਾ ਬਹਾਦਰ ਜੀ ਨੇ

(b) ਬਾਬਾ ਬੁੱਢਾ ਜੀ ਨੇ

(c) ਭਾਈ ਗੁਰਦਾਸ ਜੀ ਨੇ

(d) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਗੋਬਿੰਦ ਸਿੰਘ ਜੀ ਮਹਾਰਾਜ ਨੇ

(iv) ਸ਼ਾਹ ਹੁਸੈਨ ਜੀ ਕਿਸ ਪੜਾਅ ਦੇ ਸੂਫ਼ੀ ਸਨ ?

(a) ਪਹਿਲੇ

(b) ਦੂਜੇ

(c) ਤੀਜੇ

(d) ਚੌਥੇ

(v) ਪੀਲੂ ਦੀ ਪ੍ਰਸਿੱਧ ਰਚਨਾ ਕਿਹੜੀ ਮੰਨੀ ਗਈ ਹੈ ?

(a) ਹੀਰ-ਰਾਂਝਾ

(b) ਮਿਰਜਾ-ਸਾਹਿਬਾਂ

(c) ਸੋਹਣੀ-ਮਹੀਵਾਲ

(d) ਸੱਸੀ-ਪੁੰਨੂੰ

(vi) ਪੰਜਾਬੀ ਦੀ ਸਭ ਤੋਂ ਪੁਰਾਣੀ ਅਤੇ ਪਹਿਲੀ ਰਚਨਾ ਕਿਹੜੀ ਹੈ ?

(a) ਗੋਰਖ ਬਾਣੀ

(b) ਫ਼ਰੀਦ ਬਾਣੀ

(c) ਪ੍ਰਾਣ ਸੰਗਲੀ

(d) ਗੋਰਖ ਉਪਨਿਸ਼ਦ

(vii) ਕਿਸ ਦੀ ਰਚਨਾ ਗੁਰਬਾਣੀ ਦੀ ਕੁੰਜੀ ਮੰਨੀ ਗਈ ਹੈ ?

(a) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ ਮਹਾਰਾਜ

(b) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਅਰਜਨ ਦੇਵ ਜੀ ਮਹਾਰਾਜ

(c) ਭਾਈ ਗੁਰਦਾਸ ਜੀ

(d) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਸਾਹਿਬ ਜੀ ਮਹਾਰਾਜ

(viii) ਭਾਈ ਗੁਰਦਾਸ ਜੀ ਨੇ ਕਿੰਨੀਆਂ ਵਾਰਾਂ ਲਿਖੀਆਂ ਹਨ ?

(a) 39

(b) 40

(c) 42

(d) 46

(ix) ਜੰਗਨਾਮਾ ਕਿਸ ਕਵੀ ਦੀ ਰਚਨਾ ਹੈ ?

(a) ਬੁੱਲ੍ਹੇ ਸ਼ਾਹ

(b) ਹਾਫਿਜ ਬਰਖੁਰਦਾਰ

(c) ਸ਼ਾਹ ਹੁਸੈਨ

(d) ਕਾਦਰਯਾਰ

(x) ਸਾਹਿਬ ਸ੍ਰੀ ਗੁਰੂ ਤੇਗ ਬਹਾਦਰ ਸਾਹਿਬ ਜੀ ਮਹਾਰਾਜ ਦੇ ਸਲੋਕਾਂ ਦਾ ਵਿਸ਼ਾ ਦੱਸੋ :-

(a) ਵੀਰ-ਰਸ

(b) ਸ਼ਾਂਤ-ਰਸ

(c) ਪ੍ਰਭੂ-ਪ੍ਰੇਮ

(d) ਸੰਸਾਰ ਦੀ ਨਾਸ਼ਮਾਨਤਾ

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GSQ/M-16 1784

SANSKRIT (Elective)

Time : Three Hours] [Maximum Marks : 80

नोट : सभी प्रश्न अनिवार्य हैं ।

1. निम्नलिखित प्रश्नों के उत्तर दीजिए : 8×2=16
   (i) कञ्चुकी किसे कहते हैं ? अभिज्ञान शाकुन्तलम् में कञ्चुकी कौन है ?
   (ii) राजा ने वसन्तोत्सव क्यों रोक दिया था ?
   (iii) विदूषक को पकड़ने वाला भूत कौन था ? वह उसे क्यों पकड़ता है ?
   (iv) कालिदास ने कौन-कौन से नाटक लिखे हैं ? उनमें सर्वोत्तम नाटक कौनसा है ?
   (v) रामायण की कथावस्तु कितने भागों में विभक्त है ?
   (vi) मूषक, भवत्, भवतु से स्त्रीलिङ्ग शब्द बनाइये ।
   (vii) भर्तृहरि की कौन-कौनसी रचनाएँ सुप्रसिद्ध हैं ?
   (viii) महाभारत में किस जगह गीता का उपदेश है ?

2. (अ) निम्नलिखित में से किन्हीं **दो** श्लोकों की व्याख्या कीजिए :
   (i) रम्याणि वीक्ष्य मधुरांश्च निशम्य शब्दा
   न्पर्युत्सुको भवति यत्सुखितोऽपि जन्तुः ।
   तच्चेतसा स्मरति नूनमबोधपूर्वं
   भावस्थिराणि जननान्तरसौहृदानि ॥

(ii) अतः परीक्ष्य कर्तव्यं विशेषात् संगतं रहः ।
अज्ञातहृदयेष्वेवं वैरोद्धरणि मौहृदम् ॥

(iii) सहजं किल यद् विनामवत्
न खलु तत्कर्म [illegible]यम् ॥
पशुमारणकर्मदारुणो-
ऽनुकम्यामृदुरेव धीवरः ॥

(iv) आलक्ष्यदन्तमुकुलाननिमित्तहासै-
रव्यक्तवर्णरमणीयवचः प्रवृत्तीन् ।
अङ्काश्रयप्रणयिनस्तनयान्वहन्तो
धन्यास्तदङ्गरजसा मलिनी भवन्ति ॥ 2×5=10

(ब) निम्नलिखित **एक** सूक्ति की सप्रसंग व्याख्या कीजिए :

(i) रन्ध्रोपनिपातिनोऽनर्थाः ।

अथवा

(ii) निर्वास्यतः प्रदीपस्य शिखेव जरतो मतिः । 6

3. (अ) कालिदास की रचनाओं में राष्ट्रीय भावना का विवेचन कीजिए ।

अथवा

कालिदास का जीवन-परिचय व रचनाओं का परिचय दीजिए । 10

(ब) निम्नलिखित में से किन्हीं दो की परिभाषा दीजिए :
सूत्रधार, नायक, जनान्तिकम्, प्रवेशक 2×3=6

4. (अ) महाभारत का महाकाव्य के रूप में मूल्यांकन कीजिए ।

अथवा

भारवि कवि का परिचय देते हुए उनकी काव्य-कला का परिचय दीजिए । 10

(ब) शिवराज विजय **अथवा** नीतिशतक पर टिप्पणी कीजिए । 6

5. (अ) निम्नलिखित दो सूत्रों की उदाहरण सहित व्याख्या कीजिए :

(i) वयसि प्रथमे

(ii) यूनस्तिः

(iii) अजाद्यष्टाप्

(iv) पुँयोगादाख्यायाम् । 2×4=8

(ब) निम्नलिखित में से किसी **एक** विषय पर निबन्ध लिखिए :

(i) सत्संगतिः

(ii) जननीजन्मभूमिश्च स्वर्गादपि गरीयसी

(iii) अनुशासनम्

(iv) मम प्रिय कविः

(v) नारीशिक्षायाः महत्त्वम् । 8

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GSQ/M-16 **1787**

HISTORY

Part–III, Option–(i)

Modern World

ime : Three Hours] [Maximum Marks : 80

lote : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks. Blind candidates may attempt any other question in lieu of the map question. If they wish to attempt map question, the explanatory note will carry full marks.

प्रत्येक इकाई से कम से कम **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए । प्रश्न संख्या 1 अनिवार्य है । सभी प्रश्नों के अंक समान हैं । नेत्रहीन विद्यार्थी मानचित्र संबन्धी प्रश्न के स्थान पर कोई अन्य प्रश्न कर सकते हैं । यदि वे मानचित्र संबंधी प्रश्न ही करना चाहते हैं, तो उनके लिए व्याख्यात्मक टिप्पणियों वाले भाग के पूरे अंक होंगे ।

(Compulsory Question)

(अनिवार्य प्रश्न)

. Choose the correct answer in the following question. Each question carries 2 marks : 8×2=16

निम्नलिखित प्रश्नों के सही उत्तर चुनिये । प्रत्येक प्रश्न के 2 अंक हैं

(a) Which European country founded colony in Mexico ?

(i) Spain

(ii) France

(iii) England

(iv) Russia

किस यूरोपीय देश ने मैक्सिको में उपनिवेश स्थापित किए ?

(i) स्पेन

(ii) फ्रांस

(iii) इंग्लैण्ड

(iv) रूस

(b) When was the famous book of Arnold [illegible] named "Lectures on Industrial Revolut[illegible]" published ?

(i) 1880

(ii) 1884

(iii) 1888

(iv) 1898

आर्नोल्ड टायनबी की प्रसिद्ध पुस्तक 'लेक्चर्स ऑन इण्डस्ट्रियल रिवॉल्यूशन' कब प्रकाशित हुई ?

(i) 1880

(ii) 1884

(iii) 1888

(iv) 1898

(c) When did the Act related to secrete vote pass ?

(i) 1832

(ii) 1876

(iii) 1882

(iv) 1872

गुप्त वोट सम्बन्धी एक्ट कब पास हुआ ?

(i) 1832 ई. में

(ii) 1876 ई. में

(iii) 1882 ई. में

(iv) 1872 ई. में

(d) When did the Constitution of America come into force ?

(i) 21 June, 1788

(ii) 2 March, 1789

(iii) 4 July, 1790

(iv) 6 Feb., 1791

अमेरिका का संविधान कब लागू किया गया ?

(i) 21 जून, 1788 को

(ii) 2 मार्च, 1789 को

(iii) 4 जुलाई, 1790 को

(iv) 6 फरवरी, 1791 को

(e) When did Congo become colony of Belgium ?

(i) 1902

(ii) 1895

(iii) 1899

(iv) 1908

कांगो क्षेत्र बेल्जियम का उपनिवेश कब बना ?

(i) 1902 ई. में

(ii) 1895 ई. में

(iii) 1899 ई. में

(iv) 1908 ई. में

(f) When did Wilson give fourteen points programme.

(i) 8th January, 1918

(ii) 23rd May, 1915

(iii) 6th April, 1917

(iv) 14th Oct., 1915

विल्सन ने 'चौदह-सूत्री' कार्यक्रम कब दिया ?

(i) 8 जनवरी, 1918 को

(ii) 23 मई, 1915 को

(iii) 6 अप्रैल, 1917 को

(iv) 14 अक्टूबर, 1915 को

(g) When was Communist Manifesto created ?

(i) 1848

(ii) 1847

(iii) 1851

(iv) 1850

कम्यूनिस्ट मैनीफेस्टो की रचना कब की गई ?

(i) 1848 ई. में

(ii) 1847 ई. में

(iii) 1851 ई. में

(iv) 1850 ई. में

(h) When did Italy took part in I World War ?

(i) 1941

(ii) 1914

(iii) 1915

(iv) 1918

इटली प्रथम विश्व युद्ध में कब शामिल हुआ ?

(i) 1941 ई.

(ii) 1914 ई.

(iii) 1915 ई.

(iv) 1918 ई.

Unit I

इकाई I

2. What do you understand by 'Renaissance' ? What were its effects on the history and society of Europe ? 16

'पुनर्जागरण' से आपका क्या अभिप्राय है ? यूरोप के इतिहास और समाज पर इसके प्रभावों की समीक्षा कीजिए ।

3. What do you mean by Liberalism ? Throw light on its main features and causes of its rise in England. 16

उदारवाद से आपका क्या अभिप्राय है ? इसकी मुख्य विशेषताओं तथा इंग्लैण्ड में इसके उदय के कारणों पर प्रकाश डालिये ।

Unit II

इकाई II

4. Critically examine the works and achievements of the National Constitution Assembly. 16

राष्ट्रीय संविधान सभा के कार्यों व उपलब्धियों का आलोचनात्मक वर्णन कीजिए ।

5. Write an essay on the 'Scramble of Africa' by European Power. 16

यूरोपीय देशों द्वारा अफ्रीका के विभाजन पर एक निबन्ध लिखिए ।

Unit III

इकाई III

6. Critically analyse the Paris Peace Settlements. 16

पेरिस शान्ति सन्धियों का आलोचनात्मक विश्लेषण कीजिए ।

7. What do you know about Fascism ? Explain the role of Mussolini in the rise of Fascism in Italy. 16

फासीवाद से आप क्या समझते हैं ? इटली में फासीवाद के उदय में मुसोलिनी की भूमिका का वर्णन कीजिए ।

Unit IV

इकाई IV

8. On the outline map of Europe, show the Europe on the eve of French Revolution (1789 A.D.). Also write an explanatory note. 10.6

यूरोप के रेखा मानचित्र पर फ्रांसीसी क्रान्ति (1789 ई.) के समय यूरोप को दर्शाइये । एक व्याख्यात्मक टिप्पणी भी लिखिए ।

9. On the outline map of World, show the polarization of countries before World War-I. Also write an explanatory note. 10.6

विश्व के मानचित्र पर प्रथम विश्व युद्ध से पूर्व देशों का ध्रुवीकरण दर्शाइये । व्याख्यात्मक टिप्पणी भी लिखिए ।

(viii) In which year the women were given Right to Vote in England ?

(a) 1930

(b) 1928

(c) 1918

(d) 1940

इंग्लैण्ड में महिलाओं को वोट का अधिकार किस वर्ष प्रदान किया गया ?

(अ) 1930

(ब) 1928

(स) 1918

(द) 1940

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GSQ/M-16 1790

POLITICAL SCIENCE

Paper I (Opt. I)

Comparative Constitution of UK and USA

Time : Three Hours] [Maximum Marks : 80

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

किन्हीं **पाँच** प्रश्नों के उत्तर दीजिए। सभी प्रश्नों के अंक समान हैं।

1. Describe the historical development and political tradition of United States of America. **16**

संयुक्त राज्य अमेरिका के संविधान के विकास और राजनीतिक परम्परा का वर्णन कीजिए।

2. Describe the salient features of British Constitution. **16**

ब्रिटिश संविधान की मुख्य विशेषताओं का वर्णन कीजिए।

3. Describe the powers, functions and positions of American President. **16**

अमेरिकन राष्ट्रपति की शक्तियों, कार्य तथा वास्तविक स्थिति का वर्णन कीजिए।

4. Compare and contrast the working and position of the American and British Cabinets. 16
अमेरिकन तथा ब्रिटिश मंत्रिमण्डलों के काम तथा स्थिति की तुलना कीजिए ।

5. Why is the Supreme Court of the America called the Third Chamber of the Congress ? 16
अमेरिकन सर्वोच्च न्यायालय को कांग्रेस का तीसरा सदन क्यों कहा जाता है ?

6. What is meant by Bureaucracy ? Discuss the main characteristics of British Bureaucracy. 16
नौकरशाही से क्या अभिप्राय है ? ब्रिटिश नौकरशाही की मुख्य विशेषताओं का वर्णन कीजिए ।

7. What do you mean by Political Party ? Discuss the main features of the American Party System. 16
राजनीतिक दल से क्या अभिप्राय है ? अमेरिकन दल प्रणाली की मुख्य विशेषताओं वर्णन कीजिए ।

8. What is Voting Behaviour ? Discuss the factors influencing the voting behaviour in England. 16
मतदान व्यवहार का क्या अर्थ है ? इंग्लैण्ड में मतदान व्यवहार को प्रभावित करने वाले तत्त्वों का वर्णन कीजिए ।

9. Objecitve type (multiple choice) questions :
वस्तुनिष्ठ (बहुवैकल्पिक) प्रश्न :

(i) The British Constitution is : 2
(a) Written
(b) Unwritten
(c) Federal
(d) None of the above
ब्रिटिश संविधान है :
(अ) लिखित
(ब) अलिखित
(स) संघात्मक
(द) उपर्युक्त में से कोई नहीं

(ii) "Conventions are obeyed because of the political difficulties which follow if they are not obeyed." Who said this ? 2
(a) Dicey
(b) Lowell
(c) Ogg and Zink
(d) Jennings
यह कथन किसका है, "परम्पराओं की पालना ऐसी मुश्किलों से बचने के लिए की जाती है जो मुश्किलें उनकी उल्लंघना करने से उत्पन्न होती हैं ।"
(अ) डायसी
(ब) लावैल
(स) ऑग और जिंक
(द) जैनिंग्ज

(iii) What was the total number of States at the time of establishment of Federation of USA ?

(a) 13

(b) 11

(c) 40

(d) 50

संयुक्त राज्य अमेरिका के संघ की स्थापना के समय इसमें कुल राज्य कितने थे ?

(अ) 13

(ब) 11

(स) 40

(द) 50

(iv) In USA there is :

(a) Single-party System

(b) Bi-party System

(c) Multi-party System

(d) No-party System

संयुक्त राज्य अमेरिका में :

(अ) एक दलीय प्रणाली है

(ब) द्विदलीय प्रणाली है

(स) बहुदलीय प्रणाली है

(द) राजनीतिक दलों का अभाव है

(v) What is the name of official residence of President of America ? 2

(a) 10, Downing Street

(b) Rashtrapati Bhavan

(c) Royal Palace

(d) White House

अमेरिका के राष्ट्रपति के निवास-स्थान को क्या कहते हैं ?

(अ) 10, डाउनिंग स्ट्रीट

(ब) राष्ट्रपति भवन

(स) शाही महल

(द) ह्वाइट हाउस

(vi) Tenure of British Prime Minister is :

(a) 4 years

(b) 5 years

(c) 3 years

(d) 2 years

इंग्लैण्ड के प्रधानमंत्री का कार्यकाल है :

(अ) 4 साल

(ब) 5 साल

(स) 3 साल

(द) 2 साल

(vii) Who has the credit of beginning Judicial Review in American Constitutional System ? 2

(a) George Washington

(b) Merrison

(c) Marbury

(d) Chief Justice Marshall

अमेरिकी संवैधानिक प्रणाली में 'न्यायिक पुनःनिरीक्षण के सिद्धान्त' का आरम्भ करने का श्रेय किसे जाता है ?

(अ) जॉर्ज वाशिंगटन

(ब) मैरीसन

(स) मारबरी

(द) मुख्य न्यायाधीश मार्शल

9. What are the main causes of low female-male ratio in Haryana ? Describe the measures adopted by Government for improving sex ratio. **8+8**

हरियाणा में स्त्री-पुरुष अनुपात के कम होने के क्या कारण है ? लिंग अनुपात में सुधार के लिए सरकार द्वारा अपनाए गये उपायों का वर्णन कीजिए ।

Roll No. ..... Total Pages : 06

GSQ/M-16 1792

ECONOMICS

Sectoral Aspects of Indian Economy

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit and fourth question may be attempted from any unit. Q. No. 1 is compulsory.

कुल **पाँच** प्रश्नों के उत्तर दीजिए । तीन इकाइयों में से **एक-एक** प्रश्न और चौथा प्रश्न किसी भी इकाई में से कीजिए । **पहला** प्रश्न अनिवार्य है ।

1. Choose the correct alternative :

उचित विकल्प चुनिये :

(i) Kissan Cards are issued by whom ?

(a) Mahajans

(b) World Bank

(c) Traders

(d) Commercial Banks

किसान कार्ड किसके द्वारा जारी किये जाते हैं ?

(अ) महाजन

(ब) विश्व बैंक

(स) व्यापारी

(द) व्यापारिक बैंक

(ii) In which sector Foreign Direct Investment flow is maximum in India ?

(a) Agriculture

(b) Manufacturing

(c) Service Sector

(d) Automobiles

भारत में किस क्षेत्र में विदेशी प्रत्यक्ष निवेश अधिकतम है ?

(अ) कृषि

(ब) विनिर्माण

(स) सेवा क्षेत्र

(द) आटोमोबाइल

(iii) Which of the following is the biggest import item of India ?

(a) Machinery

(b) Crude oil

(c) Cement

(d) Engineering goods

भारत के लिए निम्नलिखित में से कौनसी सबसे बड़ी आयात मद है ?

(अ) मशीनरी

(ब) खनिज तेल

(स) सीमेन्ट

(द) इंजीनियरिंग वस्तुएँ

(iv) What is the sex ratio in Haryana according to Census 2011 ?

(a) 877

(b) 940

(c) 830

(d) 970

2011 की जनगणना के अनुसार हरियाणा में लिंग अनुपात क्या है ?

(अ) 877

(ब) 940

(स) 830

(द) 970

(v) The percentage share of agriculture in India's national income is decreasing. (True/False)

भारत की राष्ट्रीय आय में कृषि का प्रतिशत हिस्सा कम हो रहा है । (सत्य/असत्य)

(vi) India is the largest borrower of World Bank. (True/False)

भारत विश्व बैंक से सबसे बड़ा ऋण प्राप्त करने वाला देश है । (सत्य/असत्य)

(vii) Difference of visible exports and visible imports is called..... .....

(Balance of Payment, Balance of Trade)

दृश्य निर्यातों व दृश्य आयातों के अन्तर को ..... कहते हैं । (भुगतान शेष, व्यापार शेष)

(viii) The share of Public Sector in India's National income is..... (20%, 60%)

भारत की राष्ट्रीय आय में सार्वजनिक क्षेत्र का हिस्सा ..... है । (20%, 60%)

8×2

Unit I
इकाई I

2. Explain various sources of agricultural finance in India. What are the major shortcomings of agricultural finance ? **8+8**

भारत में कृषि वित्त के मुख्य स्रोतों की व्याख्या कीजिए । कृषि वित्त की मुख्य कमियाँ क्या हैं ?

3. How can you say that Indian agriculture is backward ? Give suggestions to improve agricultural productivity in India. **8+8**

आप कैसे कह सकते हैं कि भारतीय कृषि पिछड़ी हुई है ? भारत में कृषि की उत्पादकता को बढ़ाने के लिए सुझाव दीजिए ।

Unit II
इकाई II

4. What do you mean by Cottage and Small scale industries in India ? Describe the measures taken by Government of India for their rapid development. **6+10**

भारत में कुटीर व लघु उद्योगों से क्या अभिप्राय है ? इनके तीव्र विकास के लिए भारत सरकार द्वारा किये गये उपायों का वर्णन कीजिए ।

5. What are the main causes of low efficiency of Public Sector Enterprises in India ? Give suggestions to improve their efficiency. **8+8=16**

भारत में सार्वजनिक क्षेत्र के उद्यमों की कम कार्यकुशलता के मुख्य कारण क्या हैं ? इनकी कार्यकुशलता को बढ़ाने के लिए सुझाव दीजिए ।

Unit III
इकाई III

6. Describe the main changes in the composition and direction of Exports and Imports of India. **16**

भारत के निर्यातों व आयातों की संरचना व दिशा में मुख्य परिवर्तनों की व्याख्या कीजिए ।

7. What are the main objectives of World Trade Orgnisation ? Explain the main advantages of WTO to India. **6+10**

विश्व व्यापार संगठन के मुख्य उद्देश्य क्या हैं ? भारत के लिए विश्व व्यापार संगठन के मुख्य लाभों का वर्णन कीजिए ।

Unit IV
इकाई IV

8. Describe the achievements and shortcomings of Fiscal Policy of Government of India. **16**

भारत सरकार की राजकोषीय नीति की उपलब्धियों व कमियों की व्याख्या कीजिए ।

निम्नलिखित पर टिप्पणियाँ लिखिए :

(अ) अल्पायु विवाह के कुप्रभाव

(ब) स्तनपान ।

7. Explain : **4,4**

(a) Signs of pregnancy

(b) Discomforts of pregnancy.

वर्णन कीजिए :

(अ) गर्भावस्था के संकेत

(ब) गर्भकाल की परेशानियाँ ।

8. Explain the characteristics of childhood. **8**

बाल्यावस्था की विशेषताओं का वर्णन कीजिए ।

9. Explain the following : **2,2,2,2**

(a) Cold

(b) Cough

(c) Fever

(d) Diarrhoea.

निम्नलिखित पर टिप्पणियाँ लिखिए :

(अ) जुकाम

(ब) खांसी

(स) बुखार

(द) अतिसार ।

Roll No. ..... Total Pages : 04

GSQ/M-16 1793

HOME SCIENCE

302

Human Development

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. All questions carry equal marks.

प्रत्येक इकाई से **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए । प्रश्न संख्या **1** अनिवार्य है । सभी प्रश्नों के अंक समान हैं ।

Compulsory Question

(अनिवार्य प्रश्न)

1. State whether the following statements are True *or* False : **1×8=8**

निम्नलिखित तथ्यों में से सही **व** गलत के बारे में बताइए :

(i) Reward and punishment is used for measurement of intelligence.

पुरस्कार और दण्ड का प्रयोग बुद्धि मापन के लिए किया जाता है ।

(ii) Personality is the total quality of individuals behaviour.
व्यक्ति के व्यवहार का सम्पूर्ण गुण उसका व्यक्तित्व है ?

(iii) The new borne is not a miniature adult.
नवजात शिशु प्रौढ़ का लघु रूप मात्र नहीं होता ।

(iv) Vericose vein is a common problem of lactating mother.
धात्री महिला में अपस्फीत शिरा एक सामान्य समस्या है ।

(v) Synthetic clothes decrease the problem of Eczema.
संश्लेषित वस्त्र एक्जीमा की समस्या को कम करते हैं ।

(vi) Nutrition does not affect the growth of children.
पोषण बच्चों के विकास को प्रभावित नहीं करता ।

(vii) Increase blood oxytocin level decreases the milk production in lactating mother.
रात में ऑक्सीटोसिन का स्तर बढ़ने से धात्री महिला में दूध का निर्माण कम होता है ।

(viii) Childhood is also known as day dreaming stage.
बाल्यावस्था को दिन में सपने लेने की अवस्था भी कहा जाता है ।

Unit I

इकाई I

2. Write short notes on the following : **3,5**

(a) Aims of Child Psychology

(b) Subject matter of Child Psychology.

निम्नलिखित पर संक्षिप्त टिप्पणियाँ लिखिए :

(अ) बाल मनोविज्ञान के लक्ष्य

(ब) बाल मनोविज्ञान का विषय-क्षेत्र ।

3. Define intelligence. What are the different methods of measuring the intelligence of a person ? **2,6**
बुद्धि की परिभाषा दीजिए । व्यक्ति की बुद्धि मापन की विभिन्न विधियाँ कौनसी हैं ?

4. Define learning and explain the different factors which affect the process of learning. **2,6**
सीखना क्या है ? सीखने को प्रभावित करने वाले विभिन्न कारकों का वर्णन कीजिए ।

5. Explain the following :

(a) Types of Play

(b) Types of Personality. **4,4**

निम्नलिखित पर टिप्पणियाँ लिखिए :

(अ) खेल के प्रकार

(ब) व्यक्तित्व के प्रकार ।

Unit II

इकाई II

6. Write notes on the following :

(a) Ill effects of early marriage

(b) Breast feeding.

Roll No. .....

Total Pages : 03

GSQ/M-16

1797

HEALTH AND PHYSICAL EDUCATION
(Theory)

Time : Three Hours]

[Maximum Marks : 60

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **9** is compulsory. All questions carry equal marks.

प्रत्येक इकाई से **एक** प्रश्न चुनते हुए कुल **पाँच** प्रश्नों के उत्तर दीजिए । प्रश्न संख्या **9** अनिवार्य है । सभी प्रश्नों के अंक समान हैं ।

Unit I

इकाई I

1. Discuss the role of traditions on the influence of behaviour pattern. **10**

परम्पराओं का व्यवहार विधि प्रभाव पर विस्तारपूर्वक वर्णन कीजिए ।

2. Explain socialization through sports in detail. **10**

खेलों के माध्यम से समाजीकरण की प्रक्रिया का विस्तारपूर्वक वर्णन कीजिए ।

Unit II
इकाई II

. Explain the importance of first aid in detail. **10**
प्राथमिक सहायता के महत्त्व का विस्तारपूर्वक वर्णन कीजिए ।

. Describe the principles of first aid in detail. **10**
प्राथमिक सहायता के सिद्धांतों का विस्तारपूर्वक वर्णन कीजिए ।

Unit III
इकाई III

Explain the professional qualification of Physical Education teachers and coaches. **10**
शारीरिक शिक्षा के अध्यापकों और कोचों की व्यावसायिक योग्यताओं का वर्णन कीजिए ।

Discuss the nature and characteristics of leadership. **10**
नेतृत्व के स्वभाव और विशेषताओं का वर्णन कीजिए ।

Unit IV
इकाई IV

Explain the mechanism of digestion in detail. **10**
पाचन क्रिया की कार्यविधि का विस्तारपूर्वक वर्णन कीजिए ।

8. What are the effects of exercise on digestive system. **10**
पाचन प्रणाली पर व्यायाम का क्या प्रभाव पड़ता है ?

Unit V
इकाई V

9. (i) What is Socialization ?
समाजीकरण क्या है ?

(ii) What are Traditions ?
परम्पराएँ क्या हैं ?

(iii) What do you mean by first aid ?
प्राथमिक सहायता से आप क्या समझते हैं ?

(iv) Write any *two* functions of first aider.
प्राथमिक सहायक के कोई **दो** कार्य लिखिए ।

(v) Name any *four* articles of first aid box.
प्राथमिक सहायता बॉक्स में रखने वाली **चार** वस्तुओं के नाम लिखिए ।

(vi) Define Leadership.
नेतृत्व की परिभाषा दीजिए ।

(vii) What do you mean by digestion ?
पाचन से आप क्या समझते हैं ?

(viii) What are the organs of digestive system ?
पाचन प्रणाली के अंग कौन-कौनसे हैं ?

(ix) Write any *two* functions of skin.
त्वचा के कोई **दो** कार्य लिखिए ।

(x) What are the organs of excretory system ?
उत्सर्जन प्रणाली के अंग कौन कौनसे हैं ?

10×2=20

Roll No. ..... Total Pages : 03

GSQ/M-16 1799

MUSIC-INSTRUMENTAL

Paper I (Theory)

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. All questions carry equal marks.

प्रत्येक इकाई से **एक** प्रश्न चुनते हुए कुल **पाँच** प्रश्नों के उत्तर दीजिए । प्रश्न संख्या 1 अनिवार्य है । सभी प्रश्नों के अंक समान हैं ।

Unit I

इकाई 1

1. Write down the notation of any Raag of Maseetkhani Gat of your syllabus. Along with Aaroh, Avroh, Pakar and its full description.

   अपने पाठ्यक्रम में से किसी एक राग की मसीतखानी गत चार तोड़ों, आरोह, अवरोह, पकड़ तथा पूर्ण परिचय सहित लिखिए ।

2. Write down the comparative study of Raag Bhimpalasi and Bahar.

   राग भीमपलासी तथा राग बहार का तुलनात्मक वर्णन कीजिए ।

3. Write down the Ekgun, Dugun, Tigun and Chaugun of Taal Jhaptal and Sultaal.
झपताल एवं सूलताल की ठाह, दुगुन, तिगुन तथा चौगुन दर्शाइए ।

4. Write the notation of any Raag in Jhaptal *or* Rupak (other than teentaal).
अपने पाठ्यक्रम में से किसी **एक** राग में झपताल या रूपक ताल की गत लिखिए ।

Unit II
इकाई II

5. Write a brief introduction of notation system with its merits and demerits.
स्वरलिपि पद्धति के गुण एवं दोषों पर प्रकाश डालिए ।

6. Write the history of Indian Music during 17th to 19th Century.
भारतीय संगीत के 17वीं से 19वीं शती तक के क्रमिक विकास का वर्णन कीजिए ।

Unit III
इकाई III

7. Explain the conribution of Ut. Ali Akbar Khan in promoting Sitar.
उस्ताद अली अकबर खाँ जी के जीवन पर प्रकाश डालिए ।

8. Explain and write the role of electronic media in promoting and popularising Indian classical music.
भारतीय शास्त्रीय संगीत के प्रचार प्रसार में इलैक्ट्रॉनिक मीडिया के योगदान का वर्णन कीजिए ।

9. Write the Razakhani Gat of Rag Kamod *or* Bihag.
राग कामोद **अथवा** राग बिहाग की रजाखानी गत लिखिए ।

10. Write the contribution of Ut. Vilayat Khan.
उस्ताद विलायत खाँ के जीवन-परिचय पर प्रकाश डालिए ।

10. Write short notes on the following :

(a) Pen Drive

(b) Memory card

(c) CD-ROM

(d) Optical Disk.

निम्नलिखित पर संक्षिप्त टिप्पणियाँ लिखिए :

(अ) पेन ड्राइव

(ब) मैमोरी कार्ड

(स) सीडी-रोम

(द) ऑप्टिकल डिस्क

Roll No. ..... Total Pages : 04

GSQ/M-16 1810

OFFICE MANAGEMENT

Computer Applications in Office Management

(Theory)

Time : Three Hours] [Maximum Marks : 80

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

किन्हीं **पाँच** प्रश्नों के उत्तर दीजिए । सभी प्रश्नों के अंक समान हैं ।

1. (a) Explain various characteristics of computers.

कम्प्यूटर्स की विभिन्न विशेषताओं का वर्णन कीजिए ।

(b) Differentiate between analog, digital and hybrid computers.

एनालॉग, डिजीटल तथा हाइब्रिड कम्प्यूटर में अन्तर स्पष्ट कीजिए ।

2. Explain the basic principle of operations of Magnetic Tapes. Also mention its advantages and disadvantages.

मैग्नेटिक टेप की कार्य-पद्धति के सिद्धान्त का वर्णन कीजिए। इसके लाभ तथा हानियाँ भी बताइये ।

3. Define and explain the following :

(a) System software

(b) Application software

(c) Operating system

(d) User Interface.

निम्नलिखित की परिभाषा एवं वर्णन कीजिए :

(अ) सिस्टम सॉफ्टवेयर

(ब) ऐप्लीकेशन सॉफ्टवेयर

(स) ऑपरेटिंग सिस्टम

(द) यूजर इन्टरफेस

4. What do you mean by network ? Differentiate between LAN and WAN.

नेटवर्क से आप क्या समझते हैं ? लेन (LAN) तथा वेन (WAN) में अन्तर बताइए ।

5. (a) Explain WWW and it elements.

WWW का वर्णन कीजिए तथा इसके घटक के बारे में बताइये ।

(b) What do you mean by video conferencing ? Explain its types.

वीडियो कान्फ्रैंसिंग क्या होती है ? इसके विभिन्न प्रकारों का वर्णन कीजिए ।

6. What do you mean by Word Processor ? Explain its uses and advantages. Also name any *three* popular word processor packages.

वर्ड प्रोसेसर क्या होता है ? इसके लाभ तथा उपयोग लिखिए। किन्हीं **तीन** बहु-प्रचलित वर्ड प्रोसेसर के नाम लिखिए ।

7. What do you mean by memory ? Explain various types of memories.

मैमोरी क्या होती है ? विभिन्न तरह की मैमोरी का वर्णन कीजिए ।

8. (a) Write a short note on Electronic Data Processing.

इलेक्ट्रॉनिक आँकड़ा प्रसंस्करण पर संक्षिप्त टिप्पणी लिखिए।

(b) Differentiate between query and table.

क्यूरी (Query) तथा टेबिल (Table) में अन्तर का वर्णन कीजिए ।

9. Write short notes on the following :

(a) Storage capacity

(b) Access Time

(c) GUI

(d) Single user operating system

निम्नलिखित पर संक्षिप्त टिप्पणियाँ लिखिए :

(अ) स्टोरेज केपेसिटी

(ब) एक्सैस समय

(स) जी. यू. आई. (GUI)

(द) सिंगल यूजर ऑपरेटिंग सिस्टम

Unit IV

8. (a) State and prove Cauchy Schwarz inequality for inner product space. 3

   (b) Let V(R) be a real inner product space. Let $\alpha, \beta \in V$ such that $\alpha \perp \beta$. Then show that $\|\alpha+\beta\|^2 = \|\alpha\|^2 + \|\beta\|^2$. Also prove the converse. 2

9. (a) Prove that every finite dimensional vector space is an inner product space. 3

   (b) Let T be a linear operator on a unitary space V(C). Prove that $T = 0$ iff $\langle T(\alpha), \alpha \rangle = 0$ for all $\alpha \in V$. 2

Roll No. ..... Totai Pages : 04

GSQ/M-16 1823

MATHEMATICS

BM-362

Linear Algebra

Time : Three Hours] [Maximum Marks : 26

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory.

(Compulsory Question)

1. (a) Let R be the field of real numbers and $W = \{(x, x, x) : x \in R\}$. Show that W is subspace of $V_3(R)$. 2

   (b) Let $T : U \to V$ be a linear transformation. Then prove that range of T i.e., R(T) is a subspace of V. 2

   (c) Let the linear transformations $T_1 : R^3 \to R^2$ such that $T_1(x, y, z) = (4x, 3y - 2z)$ and $T_2 : R^2 \to R^2$ such that $T_2(x, y) = (-2x, y)$. Compute T_1T_2 and T_2T_1. 1

   (d) Prove that :

   $$\|au\| = |a|\|u\|$$

   for all $a \in F$, $u \in V$. 1

Unit I

2. (a) Prove that a non-empty subset W of a vector space V(F) is a subspace of V if and only if $au + v \in W$ for $a \in F$ and $u, v \in W$. **3**

(b) If a set of $(n+1)$ vectors $\{v_1, v_2, v_3, \ldots\ldots v_n, v\}$ is linearly dependent and $\{v_1, v_2, v_3, \ldots\ldots v_n\}$ is a linearly independent set, then prove that v is a linear combination of the vectors $v_1, v_2, v_3, \ldots\ldots v_n$. **2**

3. (a) Show that, if W is a subspace of a finite dimensional vector space V(F), then W is a finite dimensional and dim W ≤ dim V. Also dim W = dim V iff W = V. **3**

(b) If W is a subspace of vector space V(F) and $u, u' \in V$, then prove that $W + u = W + u'$ if and only if $u - u' \in W$. **2**

Unit II

4. (a) Which of the following functions are linear transformations ? **3**

(i) $T : R^2 \to R^3$ defined by $T(x, y) = (x + y, x - y, y)$

(ii) $T : R^3 \to R$ defined by $T(x, y, z) = x^2 - y^2 + z^2$

(b) Let $T : U \to V$ be a linear transformation. Then show that $U / \ker T \cong T(U)$. **2**

5. (a) Find a linear transformation $T : R^3 \to R^3$ whose range space is spanned by the vectors (1, 2, 3), (4, 5, 6). **3**

(b) Let $S = \{v_1, v_2, v_3\}$ be a basis of $V_3(R)$, defined by $v_1 = (-1, 1, 1)$, $v_2 = (1, -1, 1)$, $v_3 = (1, 1, -1)$. Find the dual basis of S. **2**

Unit III

6. (a) Prove that a linear transformation $T : U \to V$ is non-singular iff T carries linealry independent vectors of U onto linearly independent vectors of V. **3**

(b) If $T_1 : U \to V$ and $T_2 : V \to W$ are two invertible linear transformations, then prove that T_2T_1 is also invertible and $(T_2T_1)^{-1} = T_1^{-1}T_2^{-1}$. **2**

7. (a) Find the matrix representing the transformation $T : R^3 \to R^4$ defined by $T(x, y, z) = (x + y + z, 2x + z, 2y - z, 6y)$ relative to the standard basis of R^3 and R^4. **3**

(b) Prove that if $T : V \to V$ is a linear transformation, then $\lambda \in F$ is an eigen value of T iff $T - \lambda I$ is singular. Also, the eigen space of λ is the kernel of $T \to \lambda I$. **2**

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GSQ/M-16 **1824**

MATHEMATICS

BM-363

Dynamics

Time : Three Hours] [Maximum Marks : 27

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. 1 is compulsory.

(Compulsory Question)

1. (a) Define angular acceleration along a plane curve. 1

   (b) Define S.H.M. and its amplitude. 1

   (c) Show that an apse, the particle moves at right angle to radius vector. 1

   (d) Write the formula for Horizontal Range in Projectile 1

   (e) A particle describes an equiangular spiral $r = ae^{2\theta}$ with constant angular velocity. Find its radial acceleration. 1

Unit I

2. (a) To find the expressions for tangential and Normal components of acceleration of a particle moving along a plane curve. **3**

   (b) A point P moves with a constant angular velocity about O, where O is the pole of the equiangular spiral $r = ae^{\theta}$, obtain the radial and transverse acceleration of P. **2½**

3. (a) Prove that the work done against the tension in stretching a light elastic string is equal to the product of its extension and the means of the initial and final tension. **3**

   (b) A particle moving with S.H.M of period 12 seconds travels 10 cm from the position of rest in 2 seconds. Find the amplitude, the maximum velocity and the velocity at the end of 2 seconds. **2½**

Unit II

4. (a) Two particles of masses m_1 and m_2 are connected by a light in-extensible string, m_2 is placed on a rough horizontal table, the string passes over a light smooth pulley at the edge of the table and m_1 is hanging freely. Discuss the motion, the tension in the string and the pressure on the pulley. **3**

   (b) Two scale pans each of mass 2 kg are connected by a string passing over a smooth pulley. Show how to divide a mass of 45 kg between the two pans so that the heavier pan may decend through a distance 40 m in the first 4 seconds. **2½**

5. (a) Show that the work done in stretching an elastic string of natural length l and modulus λ from tension T_1 to tension T_2 is : **2½**

$$\frac{l}{2\lambda}\left(T_2^2 - T_1^2\right)$$

   (b) A particle of mass m falls from rest at a height h above the ground. Show that the sum of kinetic and potential energies is constant throughout the motion. **3**

Unit III

6. (a) A particle slides down the outside of a smooth verticle circle starting from rest at the highest point. Discuss the motion. **3**

   (b) Two particles are let drop from the cusp of a cycloid down the curve at an interval of time t. Prove that they will meet in time : **2½**

$$2\pi\sqrt{\frac{a}{g}} + \frac{t}{2}$$

7. (a) If the focus of a trajectory lies as much below the horizontal plane through the point of projection as the vertex is above it, prove that the angle of projection is gien by : **3**

$$\sin\alpha = \frac{1}{\sqrt{3}}$$

(b) If v_1 and v_2 be the velocities at the ends of a focal chord projectile's path and 'u'' the horizontal component of the velocities, show that : **2½**

$$\frac{1}{v_1^2} + \frac{1}{v_2^2} = \frac{1}{u^2}$$

Unit IV

8. (a) Prove differential equation of central orbit in polar form. **3**

(b) A particle is projected from an apse at a distance 'a' with the velocity from infimty under the action of a central acceleration $\frac{\mu}{r^{2n+3}}$. Prove that the equation of the path is $r^n = a^n \cos n\theta$. **2½**

9. (a) To establish the equivalence of Kepler's laws for planetary motion and Newton's Law of Gravitation. **3**

(b) The greatest and least velocities of a certain planet in its orbit round the sun are 30 km/sec. and 29.2 km/sec. respectively. Find the accentricity of the orbit. **2½**

7. (a) Show that the function $f(z) = |z|^2$ is continuous everywhere, but nowhere differentiable except at the origin. 4

(b) Show that the function $f(z) = e^{-z^{-4}}\ (z \neq 0)$ and $f(0) = 0$ is not analytic at $z = 0$, although CR equations are satisfied at $z = 0$. 4

Section IV

8. (a) Find the transformation which maps outside $|z| = 1$, on the half plane $R(w) \geq 0$ so that the points $z = 1,\ 1, -1$ correspond to $w = i, 0, -1$ respectively. 4

(b) Prove that if the bilinear transformation has two distinct fixed points Q and R, then the transformation may be of form : 4

$$\frac{w - Q}{w - R} = k\frac{z - Q}{z - R}$$

9. (a) Find the image of the infinite strip $0 < y < \frac{1}{2}$ under the transformation $w = \frac{1}{z}$ and also draw the graph. 4

(b) Find all the Mobius transformations which map the unit circle $|z| = 1$ into the unit circle $|w| \leq 1$. 4

Roll No. ..... Total Pages : 04

GSQ/M-16 1832

MATHEMATICS

BM-361

Real & Complex Analysis

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. Q. No. 1 is compulsory.

(Compulsory Question)

1. (a) Find the image of point $4 - 3i$ on the sphere of radius 1 and centre (0, 0, 0). 1½

(b) Evaluate : 1½

$$\int_0^4 \frac{x^3}{\sqrt{4 - x}}\,dx$$

(c) Prove that the equation $w = e^z$ has infinitely many solutions. 1½

(d) Find the coefficient of magnification and angle of rotation at $z = 2 - 3i$ for the transformation $w = z^2$. 1½

(e) Discuss the nature of bilinear transformation $w = \frac{z}{z - 2}$. 2

Section I

2. (a) Show that the functions $u = yx - yz$, $v = x - 2y - 3z$, $w = x + 2y - 3z$ are dependent. Also establish the relation between them. **4**

(b) Express $\int_0^{\pi/2} \sin^m\theta \cos^n\theta \, d\theta$; $m, n > -1$ in terms of Beta function. Hence evaluate $\int_0^{\pi/2} \sin^2\theta \sqrt{\cos\theta} \, d\theta$. **4**

3. (a) Evaluate :

$$\int_0^a \int_{x^2/a}^{2a-x} xy \, dy \, dx$$

by changing the order of integration. **4**

(b) Evaluate :

$$\iiint \frac{dx\,dy\,dz}{\sqrt{1-x^2-y^2-z^2}}$$

the integral being extended to the positive octant of the sphere $x^2 + y^2 + z^2 = 1$. **4**

Section II

4. (a) Prove that the Fourier coefficients (i.e., a_n and b_n) of a bounded and integrable function f on $[-\pi, \pi]$ are null sequences. **4**

(b) Find the Fourier series expansion of the function $f(x)$, where, **4**

$$f(x) = \begin{cases} 0, & -\pi < x < 0 \\ \dfrac{\pi x}{4}, & 0 < x < \pi \end{cases}$$

Hence deduce that $1 + \frac{1}{3^2} + \frac{1}{5^2} + \ldots\ldots = \frac{\pi^2}{8}$.

5. (a) Obtain a Fourier series for $f(x) = \sqrt{1 - \cos x}$ in the interval $(0, 2\pi)$. **4**

Hence evaluate $\frac{1}{1.3} + \frac{1}{3.5} + \frac{1}{5.7} + \ldots\ldots$.

(b) Obtain half-range sine series for the function $f(x) = \pi x - x^2$ in the interval $(0, \pi)$ upto first three terms. **4**

Section III

6. (a) A single-valued continuous function $f(z) = u + iv$ is holomorphic in a domain D if u_x, u_y, v_x, v_y all exist, are continuous and satisfies CR equations at each point of D. **4**

(b) If $f(z) = u + iv$ represents the complex potential for an electric field and $v = x^2 - y^2 + \frac{x}{x^2 + y^2}$, find the value of u. **4**

Section IV

8. (a) Let V be an inner product space. Then show that : 4

$$|u, v| \leq \|u\| \|v\| \quad \forall u, v \in V$$

(b) Using Gram-Schmidt process, find an ortho-normal basis of the subspace W of $V_3(C)$ spanned by $u_1 = (1, 0, i)$, $u_2 = (2, 1, 1-i)$. 4

9. (a) Let T be a linear operator of a finite dimensional inner product space V(F). Show that T can be uniquely expressed as a sum of self-adjoint and a skew symmetric operator. 4

(b) Show that if α, β are vectors in a unitary space V, then : 4

$$\|\alpha+\beta\|^2 - \|\alpha-\beta\|^2 + i\|\alpha+i\beta\|^2 - i\|\alpha-i\beta\|^2 = 4\langle\alpha, \beta\rangle$$

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GSO/M-16 1833

MATHEMATICS

BM-362

Linear Algebra

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. Q. No. **1** is compulsory

(Compulsory Question)

1. (a) Define Rank and Nullity of a linear transformation. 2

(b) Define normed vector space. 1½

(c) Prove that similar matrices have same characteristic polynomial. 1½

(d) Define orthogonal complement of a orthogonal complement of a vector space. 1½

(e) State necessary and sufficient condition for a vector space V(F) to be a direct sum of its subspaces W_1 and W_2. 1½

Section I

2. (a) The linear sum of two subspaces W_1 and W_2 of a vector space V(F) is a subspace generated by the union of W_1 and W_2. 4

   (b) Extend the sets of vectors (1, 2, 3), (2, −2, 0) to form a basis of R^3. 4

3. (a) If W is a subspace of a finite dimensional vector space V(F), then W is finite dimensional and dim W ≤ dim V. Also dim W = dim V iff W = V. 4

   (b) If W is a subspace of $V = V_2(R)$ generated by (1, 2) find V/W and its basis. 4

Section II

4. (a) Prove that every n-dimensional vector space U(F) is isomorphic to F^n.

   (b) For $u_1 = (1, 1, -1)$, $u_2 = (4, 1, 1)$, $u_3 = (1, -1, 2)$ to be basis of R^3 let $T : R^3 \to R^2$ be linear transformation such that $T(u_1) = (1, 0)$, $T(u_2) = (0, 1)$, $T(u_3) = (1, 1)$. Find T.

5. (a) Prove that if $T : U \to V$ is a linear transformation, then $U/\ker T \cong T(U)$. 4

   (b) If $S = \{v_1, v_2, v_3\}$ is a basis of $V_3(R)$, defined by $v_1 = (-1, 1, 1)$, $v_2 = (1, -1, 1)$, $v_3 = (1, 1, -1)$. Find the dual basis of S. 4

Section III

6. (a) If $T_1 : U \to V$ and $T_2 : V \to W$ be two invertible linear transformations, then prove that :

   (i) T_2T_1 is also invertible

   (ii) $(T_2T_1)^{-1} = T_1^{-1}T_2^{-1}$ 4

   (b) Let $T : R^3 \to R^2$ be a linear transformation defined by $T(x, y, z) = (2x + y - z, 3x - 2y + 4z)$. Find the matrix of T with respect to ordered basis $B_1 = \{(1, 1, 1), (1, 1, 0), (1, 0, 0)\}$, and $B_2 = \{(1, 3), (1, 4)\}$ of R^3 and R^2 respectively. Also verify that :

   $$[T : B_1, B_2][u, B_1] = [T(u), B_2]$$ 4

7. (a) Prove that characteristic polynomial and the minimal polynomial of an operator T have the same irreducible factors. 4

   (b) Show that the matrix $A = \begin{bmatrix} 1 & 2 \\ -0 & 1 \end{bmatrix}$ is not diagonalizable over the Field C. 4

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GSQ/M-16 **1834**

MATHEMATICS

BM-363

Dynamics

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. Q. No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) A passenger travelling in a train with velocity 90 km/hr on a straight level track observes that another train which is 180 m long and moving constantly in the same direction takes 4 seconds to pass by. What is the velocity of passing train. **2**

(b) A mass of 4 kg is drawn across a rough horizontal table by means of a string passing over a smooth pulley fixed at an edge of the table and supports a mass of 2 kg. at the other end. If the coefficient of friction be 5/16, find the acceleration of the masses.

(c) Prove that if the time of flight of a bullet over a horizontal range R is T seconds, the inclination of the direction of projection to the horizontal is

$$\tan^{-1}\left(\frac{gT^2}{2R}\right)$$ **2**

(d) A particle moves in a plane under a central force which varies inversely as square of the distance from the fixed point. To find the orbit.

(e) A particle describes the cycloid $S = 4a \sin\psi$ with uniform speed. Find its acceleration at any point.

Section I

2. (a) If a curve is an equiangular spiral $r = ae^{\theta\cot\alpha}$ and if the radius vector of the particle has constant angular velocity; show that the resultant acceleration of the particle makes an angle 2α with the radius vector and is of magnitude $\frac{v^2}{r}$, where v is the velocity of the particle. **4**

(b) A particle moves along the curve $x = 4t$, $y = 6t - t^2$. Find the tangential and normal acceleration at $t = 3$. **4**

3. (a) Show that if the displacement of a particle moving in a straight line is expressed by the equation $x = a\cos nt + b\sin nt$, then it describe a simple Harmonic motion whose amplitude is $\sqrt{a^2 + b^2}$ and period is $2\pi/n$. **4**

(b) Prove that the work done against the tension in stretching a light elastic string is equal to the product of its extension and the mean of the initial and final tensions. **4**

Section II

4. (a) A body of mass m is placed on a horizontal plane which is moving with constant acceleration f. To find the pressure of mass m on the plane if :
   (i) the acceleration is in the upward direction
   (ii) the acceleration is in the downward direction
   (iii) what happened if the downward acceleration of the plane is more than the acceleration due to gravity.

(b) Two particles of masses m_1 and m_2 are connected by a light in extensible string; m_2 is placed on the smooth horizontal table. The string passes over a light pulley at the edge of the table and m_1 is hanging freely. Find the motion, the tension in the string and the pressure on the pulley. **4**

5. (a) An engine of horsepower H, draws a train of mass M tones up an incline of 1 in n against a resistance of m lbs at per ton. Show that maximum speed of the train is $\frac{550Hn}{M(2240+mn)}$ ft/sec. 4

(b) Prove that in any displacement of a particle, the change in KE is equal to the work done by the prepressed forces acting on the particle. 4

Section III

6. (a) A heavy particle slides down a smooth cycloid starting from rest at the cusp, the axis being verticle and vertex downwards. Prove that magnitude of the acceleration is equal to g. 4

(b) Two particles are let drop from the cusp of a cycloid down the curve at an interval of time t. Prove that they will meet in time $2\pi\sqrt{\frac{a}{g}}+\frac{t}{2}$. 4

7. (a) If v_1 and v_2 be the vilocities at the end of a focal chord projecticles path and 'u' the horizontal component of the velocity, show that : 4

$$\frac{1}{v_1^2}+\frac{1}{v_2^2}=\frac{1}{u^2}$$

(b) A particle is thrown over an isosceles right angled triangle ABC, right angled at B, from one end A of the horizontal base AC and grazing the vertex B falls at C. Show that the angle of projection is $\tan^{-1}(2)$. 4

Section IV

8. (a) Derive the differential equation of central orbit in pedal form. 4

(b) A particle moves with a central acceleration $\frac{\lambda}{(\text{distance})^3}$. Find the path and distinguish the cases. 4

9. (a) The greatest and least velocities of a certain planet in its orbit round the sun are 30 km/sec. and 29.2 km/sec. respectively. Find the accentricity of the orbit. 4

(b) To find the acceleration of a particle in terms of cylindrical polar coordinates. 4

UNIT–V
(Compulsory Question)

9. (a) If the tangential and normal accelerations of a particle be equal, prove that the velocity varies as e^{ψ}. 2

(b) Define Newton's Third law and Kepler's Ist law. 2

(c) Write the formula for horizontal range and time in projectile. 2

(d) Define Power giving units in M.K.S. and F.P.S. 2

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GSQR/M-16 **1834-R**

DYNAMICS

Paper : BM-363

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. (a) A particle moving along a circle $r = 2a \cos \theta$ in such a way that its acceleration towards the origin is always zero. Show that the transverse acceleration varies as the fifth power of cosec θ. 4

(b) The tangential acceleration of a particle moving along a circle of radius a is λ times the normal acceleration. If the speed at the certain time is u, prove that is will return to the same point after a time $\frac{a}{\lambda u}\left[1 - e^{-2\pi\lambda}\right]$.

2. (a) A train is moving at a speed of 44 km/h. A stone strikes it at right angle with a speed of 33 km/h. Find the magnitude and the direction of the velocity of the stone with which it appears to strike the passenger sitting in the train. 4

(b) A particle starting from rest and executing S.H.M. of period 18 seconds travels 10 inches in 3 seconds. Find the amplitude, maximum velocity and the velocity at the end of 3 seconds. 4

UNIT–II

3. (a) An engine of mass 30 tons pulls after it a train of 130 tons. Supposing the friction to be $\frac{1}{50}$ th of the weight of the whole train, calculate the force exerted by the engine if at the end of the first mile from the start the speed is raised to 45 m.p.h. 4

(b) If the string of an Atwood's machine can bear a strain of only $\frac{1}{8}$ of the sum of two weights, show that the least possible acceleration is $\frac{\sqrt{3}}{2}g$. 4

4. (a) A train of mass M lbs is ascending a smooth incline of 1 in n and when the velocity of the train is v ft/sec. its acceleration is f ft/sec^2. Prove that the effective horse power of the engine is $\frac{Mv(nf+g)}{550ng}$.

(b) A balloon of mass m is rising with an acceleration f. Prove that the fraction of weight of the balloon that must be detached in order to double its acceleration is $\frac{mf}{2f+g}$, assuming that up-thrust of the air remains the same.

UNIT–III

5. (a) A ball is thrown from the top of a tower 200 ft high with a velocity of 80 ft/sec. at an elevation of 30° above the horizon. Find the horizontal distance from the foot of the tower of the point where it hits the ground. 4

(b) If at any point of a parabolic path velocity be u and inclination to the horizon be β, show that the particle is moving at right angle to this direction after time $\frac{u}{g}$ cosec β. 4

6. (a) A particle of mass m slides down a rough curve under gravity in a vertical plane. Discuss the motion. 4

(b) A bead moves along a rough curved wire which is such that it changes its direction of motion with constant angular velocity. Show that a possible form of wire is an equiangular spiral. 4

UNIT–IV

7. (a) Obtain the differential equation of central orbit in reciprocal polar co-ordinates. 4

(b) A particle describes the equiangular spiral $r = ae^{\theta \cot \alpha}$ under a force to the pole. Find the law of force. 4

8. (a) The greatest and least velocities of a planet in its orbit round the sun are 30 km/sec. and 25 km/sec. Prove that the eccentricity of the orbit is $\frac{1}{11}$. 4

(b) If v_1 and v_2 are the linear velocities of a planet when it is respectively nearest and farthest from the sun then prove that

$$(1-e)v_1 = (1+e)v_2.$$

Roll No. ..... Total Pages : 03

GSQ/M-16 **1837**

PHYSICS

Paper XI, PH-601

Solid State and Nano Physics

Time : Three Hours] [Maximum Marks : 40

Note : Q. No. **1** is compulsory. Attempt *Four* more questions, selecting *one* question from each Unit. Use of scientific non-programmable calculator is allowed.

1. (a) What is Wigner Sietz primitive cell ? **2**

(b) What is the need of reciprocal lattice ? **2**

(c) Explain magnetic levitation. **2**

(d) Explain molecular assembler. **2**

Unit I

2. (a) What do you understand by Bravais lattices ? Explain different types of Bravais lattices in three dimensions. **5**

(b) Obtain a relationship between the interplanar spacing for a simple cubic lattice. **3**

3. (a) What do you understand by a space lattice, unit cell, primitive and non-primitive cell ? **4**

(b) Define and explain Miller indices and write down their important features. **4**

Unit II

4. (a) Discuss the rotating crystal method of X-ray diffraction for crystal structure analysis. **5**

(b) Show the reciprocal lattice of a simple cubic lattice is itself a simple cubic lattice. **3**

5. (a) Explain the concept of reciprocal lattice and discuss its properties. **5**

(b) From the following data, calculate the wavelength of the neutron beam and the speed of neutrons. Given $\varnothing = 30^{\circ}$, $d = 3.84\text{Å}$, $n = 1$. Take the mass of neutron = 1.67×10^{-27} kg. **3**

Unit III

6. (a) Define superconductivity. What is the significance of critical temperature, critical magnetic field and critical current density for superconductors ? **5**

(b) Explain the difference between type I and type II superconductors. **3**

7. (a) What is Josephson's effect ? Discuss d.c. and a.c. Josephson's effects and explain their importance. **5**

(b) The actual energy gap at 0 K in lead is 2.73×10^{-3} eV. **3**

(i) What is the critical temperature according to BCS theory ?

(ii) Radiation of what minimum frequency could break apart copper pair in lead at 0 K.

Unit IV

8. (a) What is scanning electron microscope (SEM) ? Explain its construction and working. **5**

(b) Discuss the application of nanotechnology in the field of automobile industry. **3**

9. (a) Explain the benefits and challenges in molecular manufacturing of nano-structure. **5**

(b) Discuss the application of nanotechnology in the field of Biotechnology. **3**

Roll No. ..... Total Pages : 03

GSQ/M-16 1838

PHYSICS

Paper XII

Atomic and Molecular Spectroscopy

Time : Three Hours] [Maximum Marks : 40

Note : Q. No. **1** is compulsory. Attempt *four* more questions, selecting *one* question from each Unit. Non-programmable scientific calculator is allowed.

1. (a) What is the importance of atomic or molecular spectra ?

(b) What is a Bohr magneton ? Calculate its value.

(c) Explain Pauli's exclusion principle.

(d) What do you mean by quantisation of rotational or vibrational energy levels of a molecule ? **2×4=8**

Unit I

2. Discuss Vector Atom Model and various quantum nos. associated with it **8**

3. (a) Discuss Hydrogen absorption spectra. **3**

(b) What are shortcomings of Bohr-Sommerfeld's theory ? **3**

(c) Explain spectral terms :
$^1D_2$ and $^3P_1$. 2

Unit II

4. What are penetrating and non-penetrating orbits ? Derive expression for spin orbit interaction energy in case of penetrating and non-penetrating orbits. 8

5. (a) What is Larmor precession ? State and prove Larmor's theorem. 5
(b) Discuss Hydrogen fine spectra. 3

Unit III

6. Discuss L-S coupling. When does it takes place ? Derive expression for interaction energy in case of L-S coupling. 8

7. (a) What do you mean by hyperfine structure of spectral lines ? Also, discuss the causes of hyperfine structure. 4
(b) Explain, how Pauli's exclusion principle helped in periodic classification of elements. 4

Unit IV

8. What is Zeeman Effect ? Give its classical explanation. Also discuss the Zeeman pattern of D_1 and D_2 lines of Na. 1+4+3

9. (a) What is Raman Effect ? Give its classical explanation. 1+4
(b) With exciting lines of 4358 Å, a sample gives Stokes' line at 4458 Å. Deduce the wavelength of Anti Stokes' line. 3

Roll No. .....

Total Pages : 03

GSQ/M-16 **1839**

CHEMISTRY

Paper XVIII Opt. (CH-304)

Inorganic Chemistry

Time : Three Hours] [Maximum Marks : 27

Note : Attempt *Five* questions in all, selecting at least *two* questions from each Section.

Section A

1. (a) Discuss the factors responsible for metal-carbon bond cleavage in organometallic compounds. **2**

   (b) Explain the structure of methyl-lithium. **2**

   (c) Give *three* methods of preparation of metal carbonyls. **1½**

2. (a) Discuss the nature of bonding metal carbonyls. **2**

   (b) Give any *two* methods of preparation and *two* important uses of organoaluminium compounds. **2**

   (c) Calculate effective atomic number of manganese in $[Mn(CO)_5C_2H_4]^{+1}$. **1½**

3. (a) Explain Lux Flood concept of Acids and Bases. **2**

(b) Explain how $SnCl_4$ and CO_2 behave as lewis acids. **2**

(c) Why $[AgI_2]^{-1}$ is stable while $[AgF_2]^{-1}$ is unstable ? **1½**

4. (a) What are limitations of HSAB principle ? **2**

(b) What are conjugate acids and bases ? Give examples. **2**

(c) What is pKa ? How is $HClO_4$ more acidic than $HClO_3$? **1½**

Section B

5. (a) What are metalloporphyrins ? **2**

(b) State fundamental requirements of biological nitrogen fixation. **2**

(c) What is Co-operativity in Haemoglobin ? How is it conveyed ? **1½**

6. (a) Discuss the role of Ca^{+2} in biological system. **2**

(b) What are similarity and difference in the structure of Haemoglobin and Myoglobin and give their functions ? **2**

(c) What are essential elements used in biological process ? **1½**

7. (a) What is island model of bonding in cyclic $(NPCl_2)_3$? **2**

(b) Sketch the conformations of tetramer $(NPCl_2)_4$. **2**

(c) Draw the difunctional and trifunctional units of silicones and designate them. **1½**

8. (a) What is meant by cross-linking ? Explain important consequences of cross-linking in macromolecules. **2**

(b) Complete the following : **2**

(i) $(NPCl_2)_3 + 6CH_3HgI \rightarrow$ .....

(ii) $(NPCl_2)_3 + 6NaQR \rightarrow$ .....

(iii) $(NPCl_2)_3 + 6KSO_2F \rightarrow$ .....

(c) Give *two* uses of Phosphazenes. **1½**

Roll No. ..... Total Pages : 03

GSQ/M-16 1840

CHEMISTRY

Paper XIX (CH-305)

Physical Chemistry (Theory)

Time : Three Hours] [Maximum Marks : 26

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

Section I

1. (a) What are the 'teem symbols' of molecules in electronic spectroscopy ? **2½**

(b) In the electronic band spectrum, which transition out of $n \rightarrow \pi^*$ and $\pi \rightarrow \pi^*$ will give greater intensity and why ? What happens if an acid is present ? **2½**

2. (a) Write a short note on 'Fluorescence' and 'Phosphorescence'. What is the difference between them ? **2½**

(b) What is Chemical Actinometer ? Briefly explain the working of uranyl oxalate actinometer. **2½**

3. (a) What do you understand by the terms spin multiplicity, radiative and non-radiative transitions ? Explain them by drawing Jablonski diagram. 4

(b) What are photochemical reactions ? Give *one* example. 2

4. (a) State and explain Lambert's law and Beer's law. 3

(b) If a 2 mm thick plate of a material transmits 70% of incident light what percentage will be transmitted by a 0.5 mm thick plate ? 3

Section II

5. (a) Draw a well labelled phase diagram a water system. What do you interpret from the slope of the melting point curve ? 3

(b) What are Colligative properties ? Name them. Using colligative properties why are abnormal molecular masses observed in certain cases ? 2

6. (a) State phase rule and explain the significance of terms used with examples. 3

(b) Explain the terms :

(i) Triple point

(ii) Transition point

(iii) Eutectic point. 2

7. (a) Define Osmotic pressure. How is it determined by Berkeley and Hartley's method ? 2½

(b) A 4% solution of cane sugar gave an osmotic pressure of 208 cm of Hg at 15°C. Find its molecular weight. 2½

8. (a) Why there is a depression in freezing point when a nonvolatile solute is dissolved in a solvent ? Derive thermodynamically the relation between depression in freezing point and molecular mass of solute. 4

(b) Out of one molar and one molal aqueous solutions, which one is more concentrated and why ? 1

7. (a) What are polysters and polyamids ? Name the types of polymerisation involved. Give *one* example of each with preparation and uses. 4

(b) Give names and structures of monomeric units of the following :

(i) Bakelite

(ii) Teflon

(iii) Polyacrylonitrile (PAN). 1½

8. (a) Prepare a dipeptide Glu-Ala by classical peptide synthesis. 3½

(b) What is natural rubber ? 1

(c) Draw the structures of Keto-enol tautomers of ethylacetoacetate. 1

Roll No. ..... Total Pages : 04

GSQ/M-16 **1841**

CHEMISTRY

Paper XX (CH-306)

Organic Chemistry

Time : Three Hours] [Maximum Marks : 27

Note : Attempt *Five* questions in all, selecting at least *two* questions from each Section.

Section A

1. (a) Give preparation of sulphonamide from Benzene and its uses. 1½

(b) Convert the following :

(i) Benzene Sulphonic acid into Phenol

(ii) Trioether into Sulphoxide

(iii) Alkene into Thiol

(iv) Ether into Thioether. 2

(c) (i) Write equation for the reaction of ethanediol with :

(1) Mercuric oxide

(2) Acetone.

(ii) Give oxidation reaction of Thioether. Why is it oxidised easily ? 2

2. (a) Give :

(i) Feist-Binary synthesis of Furan

(ii) Skraup synthesis of Quinoline. **2**

(b) Give mechanism of Electrophilic substitution reaction in Pyridine. Why does it take place only at position 3 ? **1½**

(c) What happens when :

(i) Pyrrole is treated with :

(1) $CHCl_3/KOH$

(2) Cr_2O_3/CH_3COOH.

(ii) Furan is treated with Benzyne.

(iii) Thiophene is treated with diazomethane. **2**

3. (a) Describe the orbital picture of Thiophene and discuss its aromatic character. **2**

(b) Why does Pyridine give nucleophilic substitution reaction but not Benzene ? **1½**

(c) What happens when :

(i) Indole is treated with Sn/HCl

(ii) Quinoline is treated with Br_2/Ag_2SO_4

(iii) Iso-Quinoline is treated with Alkaline $KMnO_4$.

(iv) Pyridine is treated with $NaNH_2$ at 373K. **2**

4. (a) Explain the following :

(i) Piperidine is more basic than Pyridine. **2**

(ii) Pyrrole is acidic like phenol.

(b) What are synthetic detergents ? Give name and structure of any *two*. **1½**

(c) Electrophilic substitution in Iso-Quinoline takes place in which ring and why ? Give *one* example. **2**

Section B

5. (a) Carry out the synthesis of the following from ethyl acetoacetate : **3**

(i) 3-methyl-2-pentanone

(ii) Butanoic acid.

(b) Why α-hydrogens in carbonyl compounds are acidic in nature ? They are more acidic in malonic ester than ethyl acetate. Explain. **2½**

6. (a) Give synthesis of alanine by Gabriel Phthalimide synthesis. **2**

(b) Explain the following with reference to amino acids and proteins :

(i) Electrophoresis

(ii) Essential amino acids with *two* examples

(iii) Zwitter ion. **1½**

(c) Draw a structure of Tripeptide Gly-Ala-Leu. What do you mean by N-terminal amino acid residue and C-terminal amino acid residue. **2**

3. Write notes on the following :
   (a) Michaelis Menten Constant
   (b) Ethylene as growth horomone. 5–3=8

4. Write notes on the following :
   (a) Gibberellins
   (b) Abscisic acid as growth inhibitor. 4×2=8

5. Write notes on the following :
   (a) Alpha-Oxidation
   (b) Unsaturated fatty acids. 4×2=8

Section B

6. Describe the mechanism of Nitrogen fixation in leguminous plants. 8

7. Write notes on the following :
   (a) Nitrate assimilation in plants
   (b) Nitrogenase enzyme structure. 4×2=8

8. What do you mean by Genetic Engineering ? Give a brief account of recombinant DNA Technolgoy. 4×2=8

9. Discuss the following :
   (a) Agrobacterium vectors
   (b) Cellular totipotency. 4×2=8

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Total Pages : 02

1844

GSQ/M-16

BOTANY

Paper I

Biochemistry & Plant Biotechnology

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt *two* questions from each Unit. All questions carry equal marks.

1. Compulsory question :
   (a) Define Coenzyme.
   (b) Auxine derived from which amino acid.
   (c) What is Bolting ?
   (d) Name the hormone which induce *de-novo* synthesis of hydrolytic enzymes.
   (e) Restriction Nuclease Enzymes.
   (f) COSMID Vector.
   (g) Electroporation.
   (h) Polymerase Chain Reaction (PCR). 1×8=8

Section A

2. What are Enzymes and explain their mode and mechanism of action ? 8

P.T.O.

3. Write in brief on the following :

(a) Tomato

(b) Flax. **4+4**

4. What are oils ? Give a brief account of origin, distribution, botanical description, cultivation and uses of coconut. **8**

5. Write short notes on the following :

(a) Gram

(b) Cotton. **4+4**

Unit II

6. Give a concise account of morphology of plant part used, cultivation and uses of :

(a) Cinchona

(b) Ferula. **4+4**

7. Write short notes on the following :

(a) Hevea

(b) Sugarcane. **4+4**

8. Write in brief on the following :

(a) Timber

(b) Bio-fuels. **4+4**

9. Write short notes on the following :

(a) Tea

(b) Neem. **4+4**

Roll No. ..... Total Pages : 02

GSO/M-16 1845

BOTANY

Paper II

Economic Botany

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *two* questions from each Unit. Question No. **1** is compulsory. All questions carry equal marks.

1. Answer the following :

(a) What is the morphological nature of Jute fibres ?

(b) Which part of wheat grain contains proteins ?

(c) Why are pulses rich in proteins ?

(d) How vegetable oil is converted into vegetable ghee ?

(e) Which part of poppy plant is a source of opium ?

(f) Which Indian state contributes maximum in the production of coffee ?

(g) What is Valcanization ?

(h) What are spices ? **1×8=8**

Unit I

2. Give a concise account of origin, distribution, botanical description, cultivation and uses of rice. **8**

Roll No. ..... Total Pages : 03

GSQ/M-16 1846

ZOOLOGY

Paper I

Aquaculture and Pest Management-I

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *two* questions each from Section A and B. Q. No. **1** is compulsory.

1. Explain the following in about 20 words :
   (a) Pest
   (b) Maggots
   (c) Marine fisheries
   (d) Dinghi
   (e) Scoop net
   (f) Shell fishes
   (g) Polar lakes
   (h) Oligophagous
   (i) Caterpillar
   (j) Zoological name of rice stem borer. **1.5×10=15**

Section A

2. (a) Describe the lake fisheries in detail. **3+3.25**

(b) Describe fauna of Brahmaputra river system.

3+3.25

3. Write an essay on fishing gears. 6.25

4. Write notes on the following :

(a) World Fish demand and utilization

(b) Mollusc Culture. 3+3.25

5. Write notes on the following :

(a) Cold water fisheries

(b) Siers. 3+3.25

Section B

6. Explain the systematic position, habits, [illegible] life-cycle and control of wheat stem borer. [illegible]

7. Discuss the nature of damage caused and [illegible] following pests :

(a) Sugarcane whitefly

(b) The paddy beetle. 3+3

8. Give the systematic position of the following pests :

(a) The baddy beetle

(b) Gandhi bug

(c) Cotton [illegible]

(d) Sugarcane [illegible] hopper [illegible]

9. Write notes on the damage causing stage and control of the following pests :

(a) Rice [illegible]

(b) Pink [illegible]

(c) Sugarcane top borer 2+2+2.25

Roll No. .....

Total Pages : 03

GSQ/M-16 **1847**

ZOOLOGY

Paper–II

Aquaculture and Pest Management–II

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Section. Question No. 1 is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) Name the gears used for spawn collection.

(b) Define feed.

(c) What are rearing ponds ?

(d) What is hybridization ?

(e) What do you mean by polyculture ?

(f) Write the Zoological name of Rice Weevil.

(g) What are carbamates ?

(h) Name few biological agents used for control of insect pest.

(i) What is Debarking ?

(j) Name *two* hormons used to control insect pest.

$1\frac{1}{2} \times 10 = 15$

Section A

2. Describe riverine spawn resource investigation techniques. $6\frac{1}{4}$

3. Write notes on the following :

   (a) Running water culture $3\frac{1}{4}$

   (b) Cage culture 3

4. Explain artificial fish food. What characteristics it should have ? $6\frac{1}{4}$

5. Discuss the following :

   (a) Cryopreservation of gametes. $3\frac{1}{4}$

   (b) Monosex culture. 3

Section B

6. Describe the systemic position, habits and nature of damage caused by the following :

   (a) *Callosobruchus maculatus* $3\frac{1}{4}$

   (b) *Tribolium castaneum* 3

7. Discuss in detail about the biological methods to control insect pests. $6\frac{1}{4}$

8. Explain the use of the following in insect pest management :

   (a) Pheromones $3\frac{1}{4}$

   (b) Antifeedants 3

9. Write a note on nature and extent of damage caused by rodent pests and pestiferous birds. $6\frac{1}{4}$

Roll No. .....

Total Pages : 03

GSO/M-16 **1850**

ELECTRONIC

Paper–I

Microprocessor Architecture and Programming–II

(Theory)

Time : Three Hours] [Maximum Marks : 70

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Question No. 1 is compulsory.

1. (a) Make a control word for the following configuration of 8255 A in mode 0 :

Port A : input
Port C_U : input
Port B : output
Port C_L : output 2

(b) Differentiate between Hardware and software interrupt in brief.

(c) How many counters are there in 8253 and how these are selected ? 2

(d) Elaborate in brief, the role of D.M.A. in data transfer. 2

Unit I

2. (a) Explain Interrupt driven input/output data transfer scheme. 6

   (b) Discuss E.I and D.I instructions with suitable example. 2

3. (a) What is an interrupt ? How data is transferred between the Microprocessor and I/O devices ? 6

   (b) Differentiate between Maskable and Non-Maskable interrupts. 2

Unit II

4. (a) Discuss bit pattern for control word format of 8255 A. 3

   (b) Write an assembly language program to generate a square wave of 1 KHz frequency using 8255 A. The wave should be available at PA_0 pin of Port A 5

5. Discuss in detail the mode 1 output configuration of 8255 along with its control word and status word. 8

Unit III

6. (a) Explain the bit pattern of control word format of IC 8253. 4

   (b) Write a program in Assembly language to initialize 8253 to load counter 0 in mode 1 with C8DDH B.C.D. number. 4

7. (a) Discuss how 8253 can be used as RATE GENERATOR ? 4

   (b) Write a program in assembly language to generate a square wave of 4KH. frequency using counter 1 of 8253, where a frequency of 2 MHz clock signal is applied to CLK terminal of the counter. 4

Unit IV

8. Explain in detail Microprocessor based washing Machine control system along with assembly language program. 8

9. (a) Draw block diagram of 8257 D.M.A. Controller. Discuss function of each block. 6

   (b) Discuss, how 8257 is programmed in rotating priority option. 2

Unit IV

8. (a) When passing an argument to a function, what is the difference between passing by value and passing by reference ?

   (b) When a one dimensional character array of unspecified length is assigned an initial value, what extra character is automatically added to the end of the string ?

   (c) Describe the array that is defined in the following statements. Indicate what values are assigned to the individual array elements :

   (i) int Z[12] = {0, 0, 8, 0, 0, 6}

   (ii) flot C[8] = {2., 5., 3., –4.} **2,2,4**

9. (a) How a pointer variable declared ? What is the purpose of the data type included in the declaration ?

   (b) Explain the meaning of the declarations :

   (i) char C1, C2, C3

   (ii) flot * pa = &a;

   (iii) double *a [12];

   (iv) long (*p) [10] [20]; **4,4**

Roll No. ..... **Total Pages : 04**

GSQ/M-16 1851

ELECTRONICS

Paper II (Th)

Introduction to C and its Programming

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt *one* question from each Unit.

Compulsory Question

1. (a) Name and discuss the *four* basic data types in C.

   (b) What is the purpose of the *printf* function ? How is it used within a C program ?

   (c) What are the advantages of using functions in C ?

   (d) How are multidimensional arrays defined ? Compare with the manner in which one-dimensional arrays are defined ? **2×4**

Unit I

2. (a) Explain the purpose of expressions :

   (a % 5) = = 0 and a

   (b) Discuss Relational and Logical operators in C.

3. (a) Explain assignments and Conditional operators in C

(b) What is an array variable ? How does it differ from ordinary variable ? **4,4**

Unit II

4. **(a) What is the purpose of the *if-else* statement ?**

(b) A C-program contains the following variables declarations :

flot a = 2.5, b = 0.0005, c = 300

Show the output of the following printf statements :

(i) *Printf* ("% f % f % f", a, b c)

(ii) *Printf* ("%3f % 3f % 3f", a, b c)

5. (a) What is the purpose of *Switch* and *Break* statement ? Explain with example.

(b) Describe the output that will be generated by the following C program :

```
#include<stdio.h>
main( )
{
    Int i = 0, x = 0;
    while (i < 15) {
    if (i % 5 = = 0) {
    x += i:
    printf ("%d", x);
        }
    ++i;
    }
    Printf ("\ n x = % d", x);
    }
```

4,4

Unit III

6. (a) What are formal and actual arguments ? What is the relationship between the two ?

(b) Can a function be called from more than one place within a program ?

(c) Explain the meaning of the following function prototypes :

(i) int f (int a);

(ii) double f (double a, int b); **2,2,4**

7. (a) How are arguments data types specified in a function prototype ? What is the value of including arguments data types in function prototype ?

(b) Each of the following is the first line of a function definition. Explain the meaning of the following :

(i) flot f (long a)

(ii) char f (void) **4,4**

Unit IV

8. (a) When passing an argument to a function, what is the difference between passing by value and passing by reference ?

   (b) When a one dimensional character array of unspecified length is assigned an initial value, what extra character is automatically added to the end of the string ?

   (c) Describe the array that is defined in the following statements. Indicate what values are assigned to the individual array elements :

   (i) int Z[12] = {0, 0, 8, 0, 0, 6}

   (ii) flot C[8] = {2., 5., 3., –4.} **2,2,4**

9. (a) How a pointer variable declared ? What is the purpose of the data type included in the declaration ?

   (b) Explain the meaning of the declarations :

   (i) char C1, C2, C3

   (ii) flot * pa = &a;

   (iii) double *a [12];

   (iv) long (*p) [10] [20]; **4,4**

Roll No. ..... **Total Pages : 04**

GSQ/M-16 1851

ELECTRONICS

Paper II (Th)

Introduction to C and its Programming

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt *one* question from each Unit.

Compulsory Question

1. (a) Name and discuss the *four* basic data types in C.

   (b) What is the purpose of the *printf* function ? How is it used within a C program ?

   (c) What are the advantages of using functions in C ?

   (d) How are multidimensional arrays defined ? Compare with the manner in which one-dimensional arrays are defined ? **2×4**

Unit I

2. (a) Explain the purpose of expressions :

   (a % 5) == 0 and -a

   (b) Discuss Relational and Logical operators in C.

Roll No. ..... Total Pages : 03

GSQ/M-16 **1852**

COMPUTER SCIENCE

Paper–I

Relational Database Management System

(For Regular Students only)

Time : Three Hours] [Maximum Marks : B.A. 25, B.Sc. 40

Note : Students are required to attempt *five* questions in all. Question No. **1** is compulsory. In addition to compulsory question, students are required to attempt *four* more questions, selecting *one* question from each Unit. All questions carry equal marks.

(Compulosry Questions)

1. Write short notes on the following :

(a) Draw a sketch of Network data model.

(b) Write the conditions for 2nd normal form.

(c) Differentiate between Primary Key and Unique Key.

(d) List the name of different control statement used in PL/SQL. 8/5

Unit I

2. What is relational algebra ? Discuss relational-oriented and set-oriented operations with suitable examples. 8/5

3. What do you mean by Data Model ? Draw a comparative sketch of Relational Data Model with Hierarchical and Network Data Model. 8/5

Unit II

4. What do you mean by Relational Calculus ? Differentiate between Tuple Relational and Domain Relational Calculus. 8/5

5. What is Normalization ? Why do we need it ? Discuss similarity and dissimilarity between 3NF and BCNF. 8/5

Unit III

6. Explain the following SQL statement with syntax and example :

   (a) Alter and Update Statement

   (b) Rollback and Commit Statement. 8/5

7. Discuss the different types of Constrairts with example. What role constraints play in SQL ? 8/5

Unit IV

8. What is PL/SQL ? How are variables declared in PL/SQL ? Write a note on EXCEPTION block. 8/5

9. What are the advantages of PL/SQL ? How control structure achieve iterative control in PL/SQL ? 8/5

Roll No. ..... Total Pages : 03

GSQ/M-16 **1853**

COMPUTER SCIENCE

Paper II

Computer Networks

Time : Three Hours] [Maximum Marks { B.Sc. : 40 / B.A. : 25

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. 1 is compulsory. All questions carry equal marks.

Unit I

1. (i) Define Computer Network.
   (ii) Explain various types of Computer Network.
   (iii) Define Protocol.
   (iv) Explain various elements of protocol.
   (v) Define Modem.
   (vi) What is error and types of error ?
   (vii) What is pure ALOHA ?
   (viii) What is shortest path algorithm ?

Unit II

2. Why is OSI model used ? Explain various layers of OSI model.

3. What is Computer Network ? Explain various types of network topologies.

Unit III

4. What is Switching ? Explain various types of switching.

5. Write short notes on the following :
   (i) Bandwidth and Data Rate
   (ii) Guided and Wireless Transmission Media.

Unit IV

6. (a) Explain various methods of error detection and correction.
   (b) Explain the categories of Gigabit Ethernet.

7. Write short notes on the following :
   (i) Slotted ALOHA
   (ii) Token Ring.

Unit V

8. What is routing and types of routing algorithm ?

9. Write short notes on the following :
   (i) Digital Signatures
   (ii) Congestion Control.

Unit II

4. (a) Discuss the following : 8
   (i) Plain and Formatted Text
   (ii) RTF and HTML Text
   (b) Discuss basics of font-Design.

5. Explain Graphics use in Multimedia. Also discuss various file formats of Images. 8

Unit III

6. Define sampling, frequency, sound depth and channels for Digital Sound. 8

7. Explain 3-D Animation Techniques with emphasis on Morphing, Rotoscoping and Animation. 8

Unit IV

8. (a) Write a note on Graphics acceleration Cards.
   (b) Discuss various video standards like NTSC, PAL, SECAM and HDTV. 8

9. (a) Discuss Dynamic font Technology.
   (b) Write a note on Virtual Reality on Web. 8

Roll No. ..... Total Pages : 02

GSQ/M-16 1854

COMPUTER APPLICATION

Paper-I

Multimedia Tools

(For Regular Candidates only)

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Question No. 1 is compulsory. All questions carry equal marks.

1. (a) Name *two* communication devices and *two* memory devices used in multimedia.
   (b) Abbreviate :
   MPEG, HDTV, CIF, TIF
   (c) Define Rotoscoping
   (d) Define NTSC and PAL Standards. 8

Unit I

2. Define Multimedia. Explain its use in entertainment and in Museum and Galleries. 8

3. (a) Define Multimedia elements
   (b) Discuss stages of multimedia production 8

Roll No. ..... Total Pages : 03

GSQ/M-16 1855

ADVANCED PROGRAMMING USING C++

Paper II

Time : Three Hours] [Maximum Marks : 40

Note : Q. No. **1** is compulsory. Attempt any *four* questions out of Units I, II III & IV by selecting at least *one* question from each Unit.

1. (a) Explain the difference between structure and class in terms of Access Modifier. 2×4=8

   (b) Explain the role of preprocessor.

   (c) Compare Constructor conversion and Operator conversion.

   (d) What is the difference between the statements :

   ```
   cin >> ch;
       &
   Ch = cin.get();
   ```

Unit I

2. What is Polymorphism ? How is polymorphism achieved at compile time and run time ? 8

3. What is a virtual function ? Why do we need virtual functions ? What are the implications of making a function a pure virtual function ? **8**

Unit II

4. (a) A friend function cannot be used to overload the assignment operator =. Explain why ? **4**

   (b) Write a program in C++ which converts one basic type to class type. **4**

5. (a) We have two classes X and Y. If a is an object of X and b is an object of Y and we want to say $a = b$; what type of conversion routine should be used and where ? **4**

   (b) Write a program in C++ which converts class type to basic type. **4**

Unit III

6. What does inheritance mean in C++ ? What are the different forms of inheritance ? Give an example for each. **8**

7. Develop an object oriented program in C++ to create a library information system containing the following information for book in library : **8**

   (i) Accession Number

   (ii) Name of author

   (iii) Title of book

   (iv) Publisher name

   (v) Year of publication

   (vi) Cost of the book.

   For designing above program use inheritance.

Unit IV

8. (a) Describe how would you determine number of objects in a file. When do you need such information ? **4**

   (b) Write a function template for finding the minimum value contained in an array. **4**

9. (a) Write a program in C++ that demonstrates how certain exception types are not allowed to be thrown. **4**

   (b) Discuss the advnatages of saving data in binary form. **4**

(b) How are objects and methods used in Java script ? Give example. 8

3. Explain the following with examples (in both VB/Java script) : 8×2=16

(a) Control Statements

(b) Functions.

Unit II

4. What is Animation ? Which tools are used to animate an object ? Give examples. 16

5. Make a website of your choice with dream weaver. 16

Unit III

6. Explain color management. 16

7. Write a website from "Haryana Tourism" using CSS. 16

Unit IV

8. What are the features of Front Page ? 16

9. What is the structure of XML ? How can it be connected to Database ? 16

Roll No. ..... **Total Pages : 02**

BCR/M-16 1893

WEB DESIGNING USING ADVANCE TOOLS

BCA-361

Time : Three Hours] [Maximum Marks : 80

Note : Q. No. **1** is compulsory. Attempt *one* question from each Unit.

1. Explain the following :

(a) Links

(b) Message and Input Box

(c) Frames

(d) Formatting Bar

(e) Scroll Bar

(f) VB Script data types

(g) Transitions

(h) Animation. 2×8=16

Unit I

2. (a) How is embedding done between scripting languages and HTML ? Give example. 8

Roll No. .....

Total Pages : 03

BCA/M-16 1894

OPERATING SYSTEM-II

BCA-362

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.

1. Compulsory Question :
   (i) Explain advantages and disadvantages of single level and two level directory. 4
   (ii) Define seek time and latency time. 2
   (iii) Explain logging in and logging out of linux. 2
   (iv) Describe the structure of file system in linux briefly. 4
   (v) Write a short note on I/O in shell. 4

Unit I

2. (a) Explain two process solutions for critical sectio ıs. 6
   (b) Explain Deadlocks and Starvation problem in semaphore. 5
   (c) Write a short note on Critical Regions. 5

3. (a) Explain in detail the concept of Monitor. What are its characteristics. 6

(b) Explain Acylic Graph Directory and General Graph Directory. Also explain its advantages and disadvantages. 10

Unit II

4. (a) Explain FCFS and SCAN disk scheduling algorithm by using suitable examples. 8

(b) Write short notes on the following :

(i) Disk Implementation

(ii) Boot Block. 8

5. Define distributed systems. What are the advantages of distributed systems ? Also explain Data Migration, Computation Migration and Process Migration Concepts. 16

Unit III

6. (a) Explain Linux Architecture. Also explain how linux is different from Windows and Unix. 8

(b) Explain the following commands in Linux :

(i) cal

(ii) man

(iii) factor

(iv) bc. 8

7. Explain with examples File oriented and Directory oriented commands in Linux. 16

Unit IV

8. (a) Describe various file system components. 3

(b) Explain at, batch and corn commands by using example. 9

(c) Explain various editing commands available in Vi editor. 4

9. (a) Explain the syntax of case-esac statement with the help of program of your choice. 8

(b) Write a program to check whether a given number is a pallindrome number or not. 8

Roll No. .....

Total Pages : 03

BCR/M-16 **1896**

INTERNET TECHNOLOGIES

BCA-364

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting exactly *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. Compulsory Question :

(a) What do you understand by WWW ?

(b) Enlist some popular search engines.

(c) What is the main difference between IPv4 and IPv6 addressing ?

(d) What is IGMP ?

(e) What do you mean by web-based mail ?

(f) How can remote login be done ?

(g) What is the difference between Unicast and Multicast ?

(h) What is the need of firewall ? **8×2**

Unit I

2. (a) Discuss various ways to create information on the web. **8**

(b) Write a short note on Web browser and Chat on web. 8

3. Describe the architecture and layers of TCP/IP in detail. 16

Unit II

4. (a) What do you mean by recursive and iterative resolution in mapping ? Explain. 8

(b) Explain the packet formats of UDP and IP protocols. 8

5. Write short notes on the following : 16

(i) ICMP

(ii) DHCP

(iii) ARP

(iv) RARP.

Unit III

6. (a) What is NFS ? Explain its working in detail. 8

(b) Explain SMTP and MIME in detail. 8

7. (a) Explain the concept of VOIP. How does it work ? 8

(b) What are RTP and RCTP ? Explain differences in their features. 8

Unit IV

8. (a) What is Mobile IP ? Explain in detail. 8

(b) Discuss various measures for Internet security. 8

9. (a) What is VPN ? Discuss various types of VPNs. 8

(b) Describe the format along with working of IPSec. 8

Roll No. .....

Total Pages : 03

BCA/M-16 1897

ADVANCED PROGRAMMING WITH VISUAL BASIC

BCA-365

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least ***one*** question from each Unit. Q. No. **1** compulsory.

1. (a) Explain properties of form.

(b) Differentiate Picture Box and Image Box.

(c) How can you add shortcut keys to menu items ?

(d) Explain currentX and currentY properties of Graphics. **4×4**

Unit I

2. (a) Write a program in VB to multipy two matrices. **10**

(b) What is purpose of For Each–Next loop ? Write its syntax and explain with example. **6**

3. (a) Explain concept of multiple forms with example program of your choice. 8

(b) Discuss Drag and Drop operation with the help of examples. 4

(c) How can you manage forms at run time ? 4

Unit II

4. What do you mean by dynamic menu appearance ? Describe with examples different strategies for developing dynamic menu in visual Basic. Also discuss popup menus. 16

5. (a) What is the purpose of Toolbar Control ? Write steps to create toolbar of your choice in VB Form. 10

(b) Explain slider control with example. 6

Unit III

6. Discuss file handling in VB giving necessary statements with examples for sequential file. 16

7. Explain the following with examples :

(a) Paint Event

(b) Line and circle Methods. 8.8

Unit IV

8. (a) What is the utility of Data Bound Controls ? Explain various data bound controls with examples.

(b) Explain method to delete record from Database. 10.6

9. Implement the VB program to maintain the employee information using MS ACCESS and any database control (Empno, ename, dep-no, bp, hra, ta, da, netsal). Where netsal = bp + hra + ta + da 16

Unit II

4. Explain the difference between overloading and overriding in Java. **16**

5. Explain, how to create arrays and strings in Java. Describe various operations on arrays and strings. **16**

Unit III

6. Explain the role of constructor in inheritance. Also explain various constructors in Java. **16**

7. Explain, what is standard package. Also explain various standard packages in Java. **16**

Unit IV

8. Explain the concept of exception handling in Java. Differentiate between in-built and user defined exceptions with example. **16**

9. What is an applet in Java ? Explain. Describe Applet architecture. Explain, how to embed an applet into a web page ? **16**

Roll No. ..... Total Pages : 02

BCA/M-16 1898

PROGRAMMING IN CORE JAVA

BCA-366

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. (i) Explain the use of super keyword in Java.
   (ii) Explain, what is a package and interface ?
   (iii) What is a Bytecode ? Explain.
   (iv) Explain various argument passing mechanism.
   (v) Explain difference between JRE and JVM.
   (vi) Explain nested class and inner class.
   (vii) Explain Lexical token.
   (viii) Explain, how to import a package. **8×2=16**

Unit I

2. Explain various features of Java. Also explain basic I/O classes in Java. **16**

3. Explain decision and loop control statements with examples. **16**

Roll No. ..... Total Pages : 03

BCAR/M-16 **1899**

PROGRAMMING IN C++

BCA-361

Time : Three Hours] [Maximum Marks : 80

Note : Student will be required to attempt *Five* questions in all. Q. No. **1** is compulsory. In addition to compulosry question, student will have to attempt *four* more questions selecting *one* question from each Unit. All questions carry equal marks.

(Compulsory Question)

1. (a) What is role of constructor in inheritance ?
   (b) Write short note on abstract class in C++ with suitable example.
   (c) What are the advantages of templates ?
   (d) How do you declare a file ? Explain with an example. 4×4=16

Unit I

2. Define inheritance. What is its significance ? Explain various types of inheritance supported in C++ along with their examples. 16

3. Explain the concept of private, public and protected access specifiers in inheritance. Give suitable example to differentiate all the access specifiers. 16

Unit II

4. How can we implement dynamic polymorphism in C++ ? Explain the concept with the help of any program. 16

5. Write short notes on the following with suitable examples in C++ : 16

   (a) Virtual Destructor

   (b) Type Conversion.

Unit III

6. What is generic programming ? How do we implement genericity in C++ using function templates ? Explain with suitable example. 16

7. What do you mean by an exception ? How is it handled in C++ ? Explain using any suitable program in C++. 16

Unit IV

8. Explain the concept of file handling in C++. Discuss methods for opening and closing files in C++ along with suitable examples. 16

9. Write short notes on the following : 16

   (a) File Pointers

   (b) Manipulators and Error Handling.

Unit II

4. Explain various file and directory oriented commands in Linux. 16

5. Explain the following commands in Linux with their syntax, purpose and suitable example : 16
   (a) more
   (b) diff
   (c) grep
   (d) uniq.

Unit III

6. Explain various file system components of Linux. 16

7. Explain at, batch, cron and time commands with suitable examples. 16

Unit IV

8. What is vi-editor ? Explain the following commands in vi editor using suitable examples : 16
   (a) Creating and saving a file
   (b) Opening an existing file
   (c) Editing an existing file
   (d) Searching text.

9. Explain various control structures in Linux with suitable examples. 16

Roll No. ..... Total Pages : 02

BCAR/M-16 1900

INTRODUCTION TO LINUX

BCA-362

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *five* questions in all. Q. No. 1 is compulsory. In addition to compulsory question, student will have to attempt *four* more questions selecting *one* question from each Unit. All questions carry equal marks.

Compulsory Question

1. (a) Explain logging and logging out in Linux.
   (b) Explain write and wall command in Linux.
   (c) Explain various file system types.
   (d) Explain various input/output commands in shell programming. 4×4=16

Unit I

2. (a) Explain architecture of Linux. 8
   (b) Write at least *four* differences between Linux and Windows. 8

3. (a) Explain various features of Linux. 8
   (b) Explain various types of Linux Distributions 8

Unit II

4. Explain working of DNS. 16

5. Explain the following : 16
   (a) ARP
   (b) TCP--Services
   (c) RARP
   (d) ICMP

Unit III

6. What is e mail ? Explain architecture of SMTP. 16

7. (a) Explain VOIP.
   (b) Discuss Resource Reservation and RSVP. 16

Unit IV

8. What is Role of Routing ? Explain OSPE in detail. 16

9. Write notes on the following : 16
   (a) Firewalls
   (b) Network Interconnection.

Roll No. ..... Total Pages : 02

BCAR/M-16 1901

INTERNET TECHNOLOGY

BCA-363

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. Attempt *one* question from each Unit.

1. (a) Abbreviate :
   SMTP, UDP, DHCP, VPN
   (b) What is Anonymous FTP ?
   (c) Discuss Telnet.
   (d) Differentiate TCP and UDP. 4×4=16

Unit I

2. Explain TCP/IP model architecture in detail. Also explain various protocols used in different layers of TCP/IP Protocol. 16

3. (a) Differentiate Internet and Intranet.
   (b) Explain in brief IPV4 addressing and Packet format. 16

Roll No. .....

Total Pages : 03

BCAR/M-16

1902

VISUAL BASIC

BCA-364

Time : Three Hours]

[Maximum Marks : 80

Note : Q. No. **1** is compulsory. Attempt any *Four* questions out of units I, II, III and IV by selecting at least *one* question from each Unit. All questions carry equal marks.

1. In Visual Basic context, comment on the following :

(a) RAD-environment

(b) Event-oriented

(c) Object-based

(d) Application-oriented

(e) Graphics-oriented

(f) Arrays

(g) Collections in VB

(h) Windows-based. **2×8=16**

Unit I

2. (a) Differentiate between procedural, event-driven and object-oriented languages. **10**

(b) What is Visual Basic ? Discuss different features of VB. 6

3. (a) Explain the following in brief :
   (i) Form Layout Window
   (ii) Project Explorer Window
   (iii) Property Window
   (iv) Immediate Window. 10

   (b) Discuss in brief any *six* types of projects that can be developed in VB. 6

Unit II

4. (a) Explain inputbox function, MsgBox function and print methods by using proper examples. 10

   (b) What is the scope and lifetime of a static variable ? 6

5. (a) Describe various ways of inputting data in VB with suitable examples. 10

   (b) What is a constant ? Explain various types of constants in detail. 6

Unit III

6. Describe in detail the various control structures available in VB. 16

7. (a) What is a collection ? How can you create a collection in VB ? Explain various properties and methods within a collection with the help of suitable examples. 10

   (b) How can you declare and define an array of array ? Differentiate between Static and Dynamic array. 6

Unit IV

8. Write a program in VB having menu items such as File, Edit and Format. The File menu contains New, Open and Save. Edit menu consists of Cut, Copy and Paste. The format menu contains Bold, Italic etc. Write the coding, show the design and explain the procedure to create this project.

9. (a) What is Procedure ? What are its advantages ? Discuss the difference between Call by Value and Call by Reference with the help of proper example. 10

   (b) Write a program which explains the concept of passing an array to a procedure. 6

Roll No. ..... Total Pages : 02

BCAR/M-16 1903

MULTIMEDIA TECHNOLOGY

BCA-365

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. **1** is compulosry. In addition to compulsory question, attempt *four* more questions selecting *one* question from each Unit. All questions carry equal marks.

(Compulsory Question)

1. (a) What is PDF ?

(b) What do you mean by S-video ?

(c) What is Hypermedia ? Give *one* classic example of Hypermedia.

(d) Write a short note on DVD.

(e) Write a short note on Binary Encoding ?

(f) Define Compression Ratio ?

(g) What is MP3 ?

(h) Write a short note on Run-length coding ?

8×2=16

Unit I

2. (a) What is Multimedia Software ? Explain its categories. 8

(b) What is VRML ? Explain its various features. 8

3. What is Multimedia ? Explain various Multimedia Input devices. 16

Unit II

4. Explain different color models in video ? 16

5. (a) Explain the difference between RCB and CMY Model. 6

   (b) Explain Color Look UP Table. 10

Unit III

6. Explain Differential Pulse Code Modulation. 16

7. (a) Explain various types of Audio file formats. 10

   (b) Write a short note on digitization of sound. 6

Unit IV

8. What is dictionary based coding ? Explain LZW compression algorithm ? 16

9. (a) Explain MPEG video compression techniques. 8

   (b) Write a short note on H–263. 8

Roll No. .....

Total Pages : 03

GSQR/M-16 1925

SANSKRIT (Compulsory)

Time : Three Hours] [Maximum Marks : 90

नोट : सभी प्रश्न अनिवार्य हैं ।

1. निम्नलिखित में से किन्हीं **तीन** का सप्रसंग अनुवाद कीजिए : **7×3=21**

(i) यावदेष ब्रह्मचारी बटुरलिपुञ्जमुद्धूय कुसुमकोरकानवचिनोति, तावत् तस्यैव सतीर्थ्योऽपरस्तत्समानवयाः कस्तूरिकारेणुरूषित इव श्यामः, चन्दनचर्चितभालः, कर्पूरागुरुक्षोदच्छुरितवक्षो-बाहुदण्डः, सुगन्धपटलैरुन्निद्रयन्निव निद्रामन्थराणि कोरकनिकुरम्बकान्तरालसुप्तानि मिलिन्दवृन्दानि झटिति समुपसृत्य निवारयन् गौरबटुमेवभवादीत् ।

(ii) अथ "कन्यके ! मा भैषीः, पुत्रि ! त्वां मातुः समीपे प्रापयिष्यामः, दुहितः ! खेदं मा वह, भवगति ! भुङ्क्ष्व किञ्चित्, पिब पयः, एते तव भ्रातरः, यत् कथयिष्यसि तदेव करिष्यामः, मा स्म रोदनैः प्राणान् संशयपदवीम् आरोपय, मा स्म कोमलमिदं शरीरं शोकज्वालावलीढं कार्षीः" इति सहस्रधा बोधनेन कथमपि सम्बुद्धा किञ्चिद् दुग्धं पीतवती ।

(iii) अभूत् केवलम् अकबरशाहनामा यद्यपि गृहशत्रुर्भारतवर्षस्य तथापि शान्तिप्रियो विद्वत्प्रियश्च । अस्यैव प्रपौत्रो मूर्तिमदिव कलियुगं, गृहीतविग्रह इव चाधर्मः, आलमगीरोपाधिधारी अवरङ्गजीवः सम्प्रति दिल्लीवल्लभतां कलङ्कयति ।

(iv) गोरसिंह : [illegible] रे यवनकुलकलङ्क !

यवनयुवक : अः ! वयमपि कुल [illegible] [illegible] ? [illegible]कन्दरिकन्दरेष्वपि [illegible] [illegible] [illegible]गुलविहीनानां [illegible] [illegible] पुष्पादृक्षाणां [illegible] [illegible]

2. पं. अम्बिकादत्त व्यास की गद्य-शैली का प्रतिपादन कीजिए। [illegible]

अथवा

शिवराजविजय की [illegible] पर प्रकाश [illegible]

3. [illegible] **अथवा** [illegible] का चरित्र-चित्रण [illegible] [illegible]

4. किन्हीं तीन पर टिप्पणियाँ लिखिए : [illegible]

हर्षचरित, [illegible], गीतगोविन्द, पंचतन्त्र, [illegible] [illegible]

5. (अ) निम्नलिखित में से किन्हीं **पाँच** वाक्यों को [illegible] कीजिए : [illegible]

(i) [illegible] परितः पुष्पाणि [illegible]

(ii) दुर्जनम् धिक् ।

(iii) पुत्रः [illegible] सह क्रीडति ।

(iv) [illegible] [illegible] [illegible] ।

(v) [illegible]

(vi) [illegible] भोजनाय [illegible] [illegible]

(vii) [illegible] [illegible] सिंहः [illegible] ।

[illegible] भया

(ब) [illegible] : 1×5=5

[illegible] [illegible] [illegible] [illegible] ।

(i) [illegible] ।

(ii) [illegible] ।

(iii) [illegible] ।

(स) निम्नलिखित में से किन्हीं **पाँच** शब्दों का वाक्यों में प्रयोग कीजिए : 1×5=5

उभयतः, साकम्, प्रति, पुरः, स्वस्ति, अन्तरा, अलम्, दूरम् ।

(द) निम्नलिखित में से किन्हीं **पाँच** वाक्यों का संस्कृत में अनुवाद कीजिए : 1×5=5

(i) [illegible] ।

(ii) [illegible] है ।

(iii) [illegible] है ।

(iv) [illegible] हैं ।

(v) [illegible] है ।

(vi) [illegible] हैं ।

(vii) [illegible] ।

(viii) [illegible] ।

(ब) किन्हीं **तीन** के स्त्रीप्रत्ययान्त रूप लिखिए : 3×1=3

(i) त्रिलोक + ङीप्

(ii) गौर + ङीष्

(iii) युवत् + ङीप्

(iv) रात्रि + ङीष्

(v) कुमार + ङीप्

(vi) मध्यम + टाप् ।

7. निम्नलिखित में से किसी **एक** विषय पर संस्कृत में निबन्ध लिखिए : 15

(i) परोपकार:

(ii) मम प्रिय कवि:

(iii) संस्कृतभाषाया: महत्त्वम्

(iv) अहिंसा परमो धर्म: ।

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SANSKRIT

Elective

Time : Three Hours] [Maximum Marks : 90

नोट : सभी प्रश्न अनिवार्य हैं ।

1. निम्नलिखित मे से किन्हीं **पाँच** के संस्कृत में उत्तर दीजिए :

(i) किं अद्यैव गन्तव्यम् ?

(ii) कुत: लेखनी कुत्र ?

(iii) भोजनार्थं कोऽपि विशेष: ?

(iv) शुल्कस्य अन्तिमदिनाङ्क: कदा ?

(v) कुत्र गतवान् ?

(vi) किं समाचार: समाप्त: ?

(vii) रात्रौ निद्रा सम्यक् आसीत् ?

(viii) वेतनं लब्ध किम् ? 5×2=10

2. निम्नलिखित में से किन्ही **तीन** श्लोकों का सरलार्थ कीजिए :

(अ) सतीमति ज्ञातिकुलैकसंश्रयां
जनोऽन्यथा भर्तुमतीं विशङ्कसे ।
अत: समीपे परिणेतुरिष्यते
प्रियाप्रिया वा प्रमदा स्वबन्धुभि: ॥

(ग) व्यपदेशमाविलयितुं किमीहसे जनमिमं च पातयितुम ।
कूलंकषेव सिन्धुः प्रसन्नमोघं तटतरुं च ॥

(स) सहजं किल यद् विनिन्दितं
न खलु तत्कर्म विवर्जनीयम् ।
पशुमारणकर्म दारुणो-
ऽनुकम्पामृदुरेव क्षोत्रियः ॥

(द) स्वप्नो नु माया नु मतिभ्रमो नु
क्लिष्टं न तावत्फलमेव पुण्यम् ।
अस्मं निवृत्यै तदतीतमेते
मनोरथा नाम तटप्रपाताः ॥

(ङ) आखण्डलसमयो भर्ता
जयन्तप्रतिमः सुतः ।
आशीरन्या न ते योग्या
पौलोमीसदृशी भव ॥ **3×4=12**

3. निम्नलिखित में से **दो** सूक्तियों की सप्रसङ्ग व्याख्या कीजिए :

(अ) अनुद्धताः सत्पुरुषाः समृद्धिभिः,
स्वभाव एवैष परोपकारिणाम् ।

(ब) हंसो हि क्षीरमादत्ते तन्मिश्रां वर्जयत्यपः ।

(स) उपरागान्ते शशिनः समुपगता रोहिणी योगम् ।

(द) निर्वास्यतः प्रदीपस्य शिखेव जरतो मतिः ॥ **2×4=8**

4. शकुन्तला का चरित्र-चित्रण कीजिए ।

अथवा

सप्तम अङ्क का सार लिखिए । **1×5=5**

5. (अ) अम्बिकादत्त व्यास का जीवनवृत्त तथा उनकी रचना पर प्रकाश डालिए । **1×13=13**

अथवा

भारवि की काव्य-शैली की समीक्षा कीजिए ।

(ब) निम्नलिखित में से किन्हीं **दो** पर टिप्पणियाँ लिखिए :

(i) उत्तरगमचरितम्
(ii) पञ्चतन्त्र
(iii) गीतगोविन्द
(iv) महाभारत । **2×6=12**

6. (अ) **चार** सूत्रों की उदाहरण सहित व्याख्या कीजिए : **4×3=12**

(i) षिद् गौरादिभ्यश्च ।
(ii) वयसि प्रथमे ।
(iii) वोतो गुणवचनात् ।
(iv) बह्वादिभ्यश्च ।
(v) नखमुखात् संज्ञायाम् ।
(vi) अजाऽऽद्यतस्टाप् ।
(vii) नृनरयोर्वृद्धिश्च ।
(viii) ऊगितश्च ।

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PHYSICS

Paper-XI

Solid and Nano Physics

Time : Three Hours] [Maximum Marks : 45

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory. Use of non-programmable scientific calculator is allowed.

(Compulsory Question)

1. (a) Distinguish betwen crystaline and amorphous solids. 2

(b) State Bragg's Law of diffraction. 2

(c) Write a note on Top-down and Bottom-up Approaches. 3

(d) Give few applications of Superconductors. 2

Unit I

2. Explain different types of Bravais lattices in three dimensions. 9

3. (a) What are Miller indices ? How the orientation of a plane is specified by Miller indices ? Explain their importance. 6

(b) Describe the crystal structure of Sodium Chloride. 3

Unit II

4. (a) Explain powder method for determination of crystal structure. Why is resolution maximum in the back direction ? Explain the usefulness of Laue, Rotating crystal and powder method. 6

(b) The Bragg angle corresponding to the first order reflection from (III) planes in a crystal is 30°, when X-ray of wavelength 1·75 Å are used. Calculate the inter-atomic spacing. 3

5. Find the reciprocal lattices of simple cubic, body-centred cubic and face-centred cubic lattices with suitable diagrams. 9

Unit III

6. (a) Explain BCS theory of superconductivity. 6

(b) What are high–T_c superc-nductors ? State their important properties. 4

7. Write notes on the following :

(a) Josephson effect 4

(b) Penetration length 3

(c) Isotopic effect 2

Unit IV

8. (a) What are the challenges of molecular manufacturing ? 4

(b) Write a short note an Carbon Nanotubes (CNT). 3

(c) Discuss the special properties of nano-materials. 2

9. (a) Write a note on AFM. 5

(b) Discuss the applications of nanotechnology in the field of electronics. 4

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PHYSICS

Paper–XII

Atomic and Molecular Spectroscopy

Time : Three Hours] [Maximum Marks : 45

Note : Attempt any *Five* questions. Q. No. **1** is compulsory. Select *one* question from each Unit. All questions carry equal marks. Non-programmable calculator is allowed.

1. (a) Can a hydrogen atom absorb a photon energy greater than the binding energy of the atom ? 2

(b) What do you mean by spin-orbit interaction ? 2

(c) What is Lande's interval rule ? 2

(d) Explain the meaning of zero point energy of a molecule ? 2

(e) Write the spectral term of an atom with $S = 1/2$, $J = 5/2$ and $g = 6/7$. 1

Unit I

2. (a) Discuss the effect of nuclear motion on the spectra of hydrogen-like atoms. 6

(b) Calculate the ground state energy of electron in case of Li^{+}. 3

3. (a) Derive an expression for Bohr magneton. 4

(b) What do you understand by Larmor precession ? Find an expression for Larmor frequency. 5

Unit II

4. On the basis of classical model, obtain an expression for quantum defect in a penetrating orbit of an alkali element. 9

5. Describe the general feature of spectra of alkali atoms. Explain, how the doublet fine structure is explained on the basis of vector atom model. 9

Unit III

6. What is L-S coupling ? Find out the spectral terms arising due to sp and pd configurations. 9

7. (a) Show that for a given principal quantum number n there are n possible state each of which can accommodate a maximum of 2-electrons. 3

(b) Explain hyperfine structure of spectra and discuss its origin. 6

Unit IV

8. What is Zeeman effect ? Derive an expression for Lande g-factor. Show that anomalous Zeeman pattern of a principle series doublet of sodium by acutal transitions. 9

9. Explain Raman effect classically as well as quantum mechanically. 9

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HISTORY

Opt. (i)

Modern World

Time : Three Hours] [Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Blind candidates may attempt any other question in lieu of map question. In care they attempt the map question. The part relating to explanatory note will carry full marks.

प्रत्येक इकाई से कम से कम **एक** प्रश्न चुनते हुए, कुल **पाँच** प्रश्नों के उत्तर दीजिए । नेत्रहीन विद्यार्थी मानचित्र सम्बन्धी प्रश्न के स्थान पर कोई अन्य प्रश्न कर सकते हैं । यदि वे मानचित्र सम्बन्धी प्रश्न करना चाहें, तो टिप्पणी वाले भाग के पूरे अंक होंगे ।

Unit I

इकाई I

1. What do you mean by Reformation ? What were the causes of its rise ? **16**

धर्म सुधार आन्दोलन से आप क्या समझते हैं ? इसकी उत्पत्ति के क्या कारण थे ?

2. What do you understand by Mercantilism ? Discuss the causes and salient features of Mercantilism. 16
वाणिज्यवाद से आप क्या समझते हैं ? इसके उदय के कारणों तथा प्रमुख विशेषताओं का वर्णन कीजिए ।

3. Write an essay on the Agrarian Revolution in England. 16
इंग्लैंड में कृषि क्रान्ति पर एक निबंध लिखिए ।

Unit II
इकाई II

4. Throw light on the effects and significance of the Glorious Revolution. 16
गौरवपूर्ण क्रान्ति के प्रभाव व महत्त्व पर प्रकाश डालिए ।

5. Write an essay on the American Revolution. 16
अमेरिकी क्रान्ति पर एक निबंध लिखिए ।

6. Discuss the main causes of the French Revolution. 16
फ्रांसीसी क्रान्ति के मुख्य कारणों का वर्णन कीजिए ।

Unit III
इकाई III

7. Write an essay on the Chinese Revolution of 1949 A.D. 16
1949 ई. की चीनी क्रान्ति पर एक निबंध लिखिए ।

8. Evaluate the impacts of the First World War. 16
प्रथम विश्व युद्ध के प्रभावों का विवेचन कीजिए ।

9. Examine the causes responsible for the Second World War. 16
द्वितीय विश्व युद्ध के लिए उत्तरदायी कारणों का वर्णन कीजिए ।

Unit IV
इकाई IV

10. On the outline map of Europe, show Europe on the eve of French Revolution. Also add an explanatory note. 10+6=16
यूरोप के रेखांकित मानचित्र पर फ्रांसीसी क्रान्ति के समय का यूरोप दर्शाइए । एक व्याख्यात्मक टिप्पणी भी लिखिए ।

Or (अथवा)

On the outline map of Europe, show polarization of World War II. Also add an explanatory note. 10+6=16
यूरोप के रेखांकित मानचित्र पर द्वितीय विश्व युद्ध के ध्रुवीकरण को दर्शाइए । एक व्याख्यात्मक टिप्पणी भी लिखिए ।

Unit V
इकाई V

11. (a) Answer any *four* of the following : 4×2=8
(i) Who is father of Renaissance ?

(ii) Write the name of the famous book written by Machiavelli.

(iii) Mention the date of Fall of Bastille.

(iv) Who invented 'Safety Lamp' ?

(v) Who was the 'Prophet of New Agriculture' ?

(vi) Who wrote 'Discourse of the Husbandry' ?

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

(i) पुनर्जागरण का पिता किसे कहा जाता है ?

(ii) मैक्यावली की प्रसिद्ध पुस्तक का नाम लिखिए ।

(iii) बास्तील के पतन की तिथि बताइए ।

(iv) 'सेफ्टी लैम्प' का आविष्कार किसने किया ?

(v) कृषि क्रान्ति का पैगम्बर किसे कहते हैं ?

(vi) 'डिस्कार्स ऑफ द हस्बैन्ड्री' किसने लिखी ?

(b) Choose correct answers in the following : **4×1=4**

निम्नलिखित में से सही उत्तर चुनिए :

(i) Who invented 'Drill Machine' ?

(1) Robert Weston

(2) Jethro Tull

(3) Arthur Young

(4) Townshend

'ड्रिल मशीन' का आविष्कार किसने किया ?

(1) रॉबर्ट वेस्टन

(2) जेथ्रो टुल

(3) आर्थर यंग

(4) टाऊनशैंड

(ii) Louis XVI was assassinated in which year ?

(1) 14th July, 1789

(2) 5th May, 1789

(3) 21st January, 1793

(4) 30th September, 1792

लुई सोलहवें की हत्या कब हुई ?

(1) 14 जुलाई, 1789

(2) 5 मई, 1789

(3) 21 जनवरी, 1793

(4) 30 सितम्बर, 1792

(iii) First Opium War was started on :

(1) 1839 A.D.

(2) 1836 A.D.

(3) 1840 A.D.

(4) 1838 A.D.

प्रथम अफीम युद्ध शुरू हुआ :

(1) 1839 ई.

(2) 1836 ई.

(3) 1840 ई.

(4) 1838 ई.

(iv) Second World War was started in :

(1) 1939 A.D.

(2) 1914 A.D.

(3) 1945 A.D.

(4) 1918 A.D.

द्वितीय विश्व युद्ध कब आरम्भ हुआ था ?

(1) 1939 ई.

(2) 1914 ई.

(3) 1945 ई.

(4) 1918 ई.

(c) Match the following : 4×1=4

(a)	(b)
(i) Wealth of Nations	(a) China
(ii) Opium War	(b) George Stephenson
(iii) Stamp Act	(c) Adam Smith
(iv) Locomotive Engine	(d) Grenwil

निम्नलिखित का मिलान कीजिए :

(अ)	(ब)
(i) वेल्थ ऑफ नेशन्ज	(क) चीन
(ii) अफीम युद्ध	(ख) जॉर्ज स्टीफेन्सन
(iii) स्टैम्प एक्ट	(ग) एडम स्मिथ
(iv) रेल इंजन	(घ) ग्रेनविल

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GSQR(13-15)/M-16 **1938**

COMPUTER SCIENCE

Paper V

Relational Database Management System

Time : Three Hours] [Maximum Marks : B.Sc. : 40, B.A. : 25

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory.

1. Compulsory Question

(a) What is Relational Database Schema ?

(b) Define degree of relation.

(c) Define fully functional dependency.

(d) What is drop schema and drop table command ? **2×4**

Unit I

2. (a) Define relation. Explain various characteristics of relation. **4**

(b) Differentiate between entity integrity and referential integrity constraints. **4**

3. (a) Discuss various types of JOIN operations. Why theta join operation is required ? **4**

(b) What is the FUNCTION operation ? Why is it used for ? **4**

Unit II

4. (a) Discuss insertion, deletion, modification anomalies. Explain with example. **5**

(b) Why are many nulls in a relation considered bad ? **3**

5. (a) Define Normalization. Explain 2NF and 3NF with example. **5**

(b) Explain transitive dependency with example. **3**

Unit III

6. What is a view in SQL ? How is it defined ? Discuss the problem that may arise when one attempt to update a view. **8**

7. (a) How does SQL allow implementation of the entity integrity and referential integrity constraints ? **5**

(b) Explain any *two* SQL commands with example. **3**

Unit IV

8. Explain various control structures in PL/SQL. **8**

9. Explain various data types available in PL/SQL. **8**

Roll No. .....

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COMPUTER APPLICATION

Paper IV

Introduction to Linux

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. In addition to compulsory question, student will have to attempt *four* more questions selecting *one* question from each Unit. All questions carry equal marks.

Compulsory Question

1. (a) What is Open Source Software ? Why is Linux known as open source software ? **4×2=8**

(b) What is the use of write command in Linux ?

(c) Elaborate on various file system types.

(d) Explain the use of echo command in Linux.

Unit I

2. Differentiate between the Windows and Linux Operating System. **8**

3. Explain basic features of Linux operating system. **8**

Unit II

4. Explain any *six* file oriented commands in Linux along with syntax and suitable example. **8**

5. Explain the following commands in Linux with suitable examples : **8**

(i) more

(ii) grep.

Unit III

6. What do you mean by inode in Linux ? Which information is available in inode ? **8**

7. Elaborate on various job control commands in Linux. **8**

Unit IV

8. What is vi editor ? Explain various modes of vi editor. Give examples. **8**

9. Explain the following control statements in Linux with suitable examples : **8**

(i) if-then-fi

(ii) case-esac

(iii) while

(iv) for

Roll No. ..... Total Pages : 03

GSQR(13-15)/M-16 **1940**

COMPUTER APPLICATION

Paper–V

Introduction to .NET

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) What is Microsoft Intermediate Language (MSIL) ? 1

   (b) What is scope of Instance and Static Variable ? 1

   (c) Explain bitwise And, OR, Ex-OR operators. 1½

   (d) What is unboxing ? How is it achieved ? 1½

   (e) What do you mean by Interface ? Explain with the help of example. 1½

   (f) What is Run Time Polymorphism ? 1½

Unit I

2. (a) Explain different features of .Net. 4

   (b) What is Common Language Runtime ? Discuss its role in .Net Framework. 4

Roll No. ..... Total Pages : 03

GSQR(13-15)/M-16 1940

COMPUTER APPLICATION

Paper–V

Introduction to .NET

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) What is Microsoft Intermediate Language (MSIL) ? 1

   (b) What is scope of Instance and Static Variable ? 1

   (c) Explain bitwise And, OR, Ex-OR operators. 1½

   (d) What is unboxing ? How is it achieved ? 1½

   (e) What do you mean by Interface ? Explain with the help of example. 1½

   (f) What is Run Time Polymorphism ? 1½

Unit I

2. (a) Explain different features of .Net. 4

   (b) What is Common Language Runtime ? Discuss its role in .Net Framework. 4

3. Discuss the evolution of Web Development. 8

Unit II

4. (a) Explain Class Libraries in C#. 4

   (b) What are Attributes in C# ? Explain its uses. 4

5. (a) What do you mean by a variable ? List the rules of naming variable. How are the variables declared and initialized ? 5

   (b) What is default value ? Write default values of different type of variables in C#. 3

Unit III

6. (a) Discuss switch statement. What is fall through in switch statement with respect to C# ? How is it different from nested if ? 6

   (b) How is while loop different from do–while loop ? 2

7. (a) Define function overloading ? When do we need it ? How is the overloaded function selected ? 4

   (b) Discuss different types of constructors in C#. 4

Unit IV

8. (a) What is Multilevel Inheritance ? Write a program in C# to implement it. 4

   (b) What is method overriding ? Illustrate the concept by taking your own examples. 4

9. What is exception ? Give some examples. How do we define the following :

   (i) Try block

   (ii) Catch block

   (iii) Finally block.

   What are purposes of using them ? Write C# segments showing their use. 8

Roll No. .....

Total Pages : 03

BSIT/M-16 12141

COMPUTER SYSTEM ARCHITECTURE-II

BSIT–601

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. Attempt *one* question from each Unit. All questions carry equal marks.

1. Attempt all questions :
   (a) What is the goal of memory hierarchy ?
   (b) What is the purpose of parallel processing ?
   (c) List *four* peripheral devices that produce an acceptable output for a person to understand ?
   (d) Draw a space–time diagram for a six segment pipeline showing the time it takes to process eight tasks.
   (e) How many switch points are there in a crossbar switch network that connects p processors to m memory modules ?
   (f) What do you mean by locality of reference ?

Unit I

2. (a) Explain the types of Flynn's Classification.
   (b) Explain the Four-Segment Instruction Pipeline with example.

3. (a) Write a short note on Memory Interleaving ?
   (b) What do you mean by RISC Pipeline ? Explain with an example.

Unit II

4. What do you mean by Cache memory ? Explain its three types of mapping with examples.

5. (a) Explain the concept of Content Addressing Memory (CAM).
   (b) What do you mean by Virtual memory ? Explain its *two* types of Page Replacement Policies ?

Unit III

6. Explain the Interconnection Structures with example.

7. (a) What do you mean by multiprocessors ? It is example of which type of Flynn's Classification ?
   (b) Differentiate between tightly coupled and loosely coupled systems.
   (c) How can we improve the performance of multiprocessing ? Explain its *two* ways.

Unit IV

8. What is DMA ? Explain the DMA Controller and its Transfer ?

9. (a) Draw timing diagram for handshaking transfer.
   (b) Differentiate between isolated I/O and memory mapped I/O. What are the advantages and disadvantages of each ?

350

Roll No. ..... Total Pages : 03

BSIT/M-16 **12142**

PROGRAMMING IN C++ –II

BSIT–602

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. 1 compulsory. All questions carry equal marks.

1. Compulsory Question : 2×4=8

(a) Define a virtual base class in C++ ? What is its significance ?

(b) Differentiate between ios :: app and ios :: out ?

(c) Write advantages of Inheritance ?

(d) Distinguish a template and a marco in C++.

Unit I

2. How can a common friend function to two different classes be declared ? Explain characteristics of a friend function with examples. 8

3. A class called distance i.e., data in feet and inches is given. Write a program in C++ to declare this class and overload '+' operator to add two objects of distance type ?

Unit II

4. Discuss the effect of Inheritance on visibility of members in : 8

   (a) Public derivation

   (b) Private derivation

   (c) Protected derivation.

5. How does inheritance influence the working of constractors and destructors ? 8

Unit III

6. Explain the following : 4,4

   (a) Abstract class

   (b) Virtual constructor and virtual destructor.

7. (a) Explain the concept of generic programming ?

   (b) Write a short note on standard template library (STL) ? 4,4

Unit IV

8. (a) Explain the following functions :

   (i) Width()

   (ii) Precision()

   (iii) Fill()

   (iv) Setf()

   (b) Distinguish the input functions fscanf() and fread() ? 4,4

9. (a) What are the keywords on which exception handling in built ? Explain each one of them with an example.

   (b) Write advantages of exception handling ? 5,3

3. Write notes on the following :
   (a) Form attribute
   (b) Any two form control

Unit II

4. Explain various tools of multimedia in designing a website.

5. Differentiate the major features of HTML with front Page. How is it helpful in designing web pages.

Unit III

6. Explain various methods to add style sheet to HTML document.

7. (a) What are the various advantages and disadvantages of Inline Style Sheet.
   (b) Explain the various properties of CSS Padding with example.

Unit IV

8. (a) What do you mean by Prolog ? Explain its components.
   (b) Explain various types of Document Type Definition (DTD) with example.

9. (a) Explain the various naming rule in XML.
   (b) Distinguish between XML and HTML.

Roll No. ..... Total Pages : 02

BSIT/M-16 12143

WEBSITE DESIGN IMPLEMENTATION AND BASIC DESIGN TOOLS-II

BSIT–603

Time : Three Hours] [Maximum Marks : Regular : 40, Reappear : 45

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. Explain the following :
   (a) XML Parsers
   (b) Data Instance
   (c) Inline Style
   (d) Nested Frameset

Unit I

2. (a) Explain the role of Inline frame in designing web-site.
   (b) What do you mean by form and what are its attributes ?

5. (a) Discuss the concepts of online chatting and conferencing. 4

(b) Write a short note on multimedia design considerations. 4

Unit III

6. What do you mean by e–Commerce ? Discuss various types of e–Commerce systems. 8

7. Describe EFT techniques. 8

Unit IV

8. Explain various electronic meeting and communication systems. 8

9. Write short notes of the following : 4×2=8

(a) Risk of using Internet.

(b) Hardware and Software Requirements for Internet.

Roll No. ..... **Total Pages : 02**

BSIT/M-16 12144

INTERNET CONCEPTS & APPLICATIONS–II

BSIT–604

Time : Three Hours] [Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory.

1. Define the following : 2×4=8

(a) Cipher

(b) EDI

(c) HTML

(d) Electronic mail.

Unit I

2. (a) Differentiate between symmetric and asymmetric key cryptography ?

(b) Write a short note on cookies. 4×2=8

3. Discuss the various types of viruses. 8

Unit II

4. What is Multimedia and describe the characteristics and application of Multimedia ? 8

Roll No. ..... Total Pages : 03

BSIT/M-16 **12145**

EMBEDDED SYSTEMS & 8051 MICROCONTROLLER

BSIT–605

Time : Three Hours] [Maximum Marks : 40

Note : There are *nine* questions in this paper. All questions carry equal marks. Attempt *Five* questions in all. Q. No. **1** is compulsory. Attempt remaining *four* questions by selecting only *one* question from each Unit.

1. (a) Define Embedded System. What are the components of embedded system ? 2

(b) Compare microprocessors and microcontrollers. 2

(c) What do you mean by Lookup tables in microcontroller ? Write their use. 2

(d) When 8051 is reset, all interrupts are disabled. How to enable these interrupts ? 2

Unit I

2. (a) Write the difference between RISC and CISC processor. 4

(b) Discuss the memory devices for embedded system. 4

3. (a) Classify the processors in embedded system ? 3

(b) Discuss the processor selection criteria for an embedded system. 3

(c) Define system on chip (SOC) with an example. 2

Unit II

4. With neat sketch explain the architecture of an 8051 microcontroller. 8

5. (a) What is the difference between the timer and counter operation of 8051 microcontroller ? Explain in brief. 4

(b) Explain the memory structure of 8051. 4

Unit III

6. (a) List different interrupts of 8051 microcontroller according to their priorities. 4

(b) Explain Jump and call instructions of 8051 with examples. 4

7. (a) Give steps to program 8051 for serial data transfer. 3

(b) Differentiate RRA and RRCA instruction in 8051 microcontroller 3

(c) Explain DJNZ instructions of intel 8051 microcontroller. 2

Unit IV

8. (a) Discuss the timing subroutines in 8051 microcontroller design with an example. 4

(b) Write the various steps for testing the 8051 microcontroller design. 4

9. (a) Explain serial data transmission method in microcontroller 8051. 4

(b) Discuss the type of delays produced by timing subroutines in 8051 microcontroller. 4

OR

Discuss "Portrait of a Lady" in the light of the statement that Eliot has presented "a genteel society, hollow from within but keeping up its appearances with confidence and self-consciousness". 15

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

BHQ/M-16 **16147**

ENGLISH

(Modern British Literature–II)

Paper–XIV

Time : Three Hours] [Maximum Marks : 80

Note : Attempt all questions.

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

Time for you and time for me,
And time yet for hundred indecisions,
And for a hundred visions and revisions,
Before the taking of a toast and tea.

OR

Among the windings of the violins
And the ariettes
Of cracked cornets
Inside my brain a dull tom-ton begins
Absurdly hammering a prelude of its own. 6

(b) Read the passage and answer the questions given at the end of it :

'Ninety-six identical twins working ninety-six identical machines!' The voice was almost tremulous with enthusiasm. 'You really know where you are. For the first time in history.' He quoted the planetary motto:

'Community, Identity, Stability.' Grand words. 'If we could bokanovskify indefinitely the whole problem would be solved.'

(i) Whose voice do you hear ?

(ii) What is 'planetary motto' ?

(iii) What do you understand by 'bokanovskify' ?

OR

He opened the door of his lock-up and called to a lounging couple of Dalta-Minus attendants to come and push his machine out on to the roof. The hangers were staffed by a single Bokanovsky Group, and the men were twins, identically small, black and hideous. Bernard gave his orders in the sharp, rather arrogant and even offensive tone of one who does not feel himself too secure in his superiority.

(i) Who opened the door and why ?

(ii) What do you know about Bokanovsky Group ?

(iii) Who is Bernard ? 6

2. Write any *six* of short answer type questions :

(a) Does "The Love Song of J. Alfred Prufrock" justify to be a song of frustration and emotional conflict ?

(b) How does "The Love song of J Atfred Prufrock" represent a complete break with nineteenth centry tradition of poetry ?

(c) Justify the problem of communication in "Portrait of a Lady".

(d) Justify the use of *bric-a-brac* in "Portriat of a Lady".

(e) How does Huxley structure the novel so that he is able to parallel life in the *Brave New World* with our life today ?

(f) How does the World Controller aid the development of Huxley's basic thesis ?

(g) Why is John considered the most important character in the *Brave New World* ?

(h) What is the significance of Huxley's use of "Ford" as a substitute for " Christ" or "God" ? (6×4=24)

3. Attempt any *two* questions :

(a) Attempt a character-sketch of John, the Savage.

(b) Theme of man-woman relationship in "Portrait of a Lady".

(c) Boredom and loneliness in "The Love Song of J. Alfred Prufrock". (2×7=14)

4. What is Huxley's attitude toward the flesh ? How is this manifested through the actions of the principal characters in the *Brave New World* ?

OR

Discuss *Brave New World* as a didactic work. 15

5. Eliot has been considered a poet of the modern sensibility. How does "The Love Song of J. Alfred Prufrock" reveal his consciousness of the modern city ?

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

16148

BHQ/M-16

ENGLISH

(Indian Writing in English–II)

Paper–XV

Time : Three Hours] [Maximum Marks : 80

Note : Attempt all questions.

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

Or in wild despair, pick an armful of
Darkness to bring it here to lie
Behind my bedroom door like a brooding Dog.....

OR

They let her slide from pegs of sanity into
A bed made soft with tears
And she lay there weeping,
For sleep had lost its use. 6

(b) Read the passage and answer the following questions : Margayya looked up as a shadow fell on his note-book. He saw a uniformed servant standing before him. It was Arul Doss, the head peon of the Co-operative Bank, an old Christian who had grown up with the institution. He had wrinkles round his eyes, and a white moustache and mild eyes.

(i) Why did Margayya look up ?

(ii) What did he see ?

(iii) Who was Arul Doss ?

OR

As he went through the town that day he was obsessed with thoughts of money. His mind rang with the words he had said to the villagers :

"I'm only trying to help you to get out of your money worries."

(i) Who is 'he' in the first sentence ?

(ii) What was he obsessed with ?

(iii) What had he said to the villagers ? 6

2. Write in short on any *six* of the following :

(a) Write down the theme of the poem 'The Freaks'.

(b) "The Sunshine Cat" is a poem of feminine sensibility. Elaborate.

(c) Describe the nostalgic mood in the poem "A Hot Noon in Malabar" .

(d) Write down the symbolic meaning of the house in the poem 'My Grand Mother's House'.

(e) Who is the central figure in 'The Financial Expert' ?

(f) Describe Dr. Pal as Foil of Margayya ?

(g) Write a short note on Margayya's love of Balu.

(h) What message has been given by R.K. Narayan through "The Financial Expert" ? (4×6=24)

3. Answer any *two* of the following :

(a) Write a note on the confessional mode in Kamala Das's poetry.

(b) Discuss images and symbols in the poetry of Kamala Das.

(c) Examine critically the role and influence of the family in moulding the career of Margayya, the Financial expert. (7×2=14)

4. Attempt a critical appreciation of the poem "The Sunshine Cat".

OR

Write a note on Kamala Das as a rebel and as a poet of protest. 15

5. How far would it be correct to say that Margayya is a financial expert ? Give a reasoned answer.

OR

Write a note on R.K. Narayan's art of plot construction with special reference to "The Financial Expert". 15

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4. How do the fisher folk give Esteban a 'splendid funeral'?

Or

What are the unusual elements in *Once Upon a Time*?

5. Comment on the women characters in *Things Fall Apart.*

Or

What are the themes and issues that have been discussed in the novel *Things Fall Apart* ? (3×15=45)

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

BHQ/M-16 **16149**

ENGLISH

(Modern World Literature–II)

Paper : XVI

Time : Three Hours] [Maximum Marks : 80

Note : Do as directed.

SECTION–A

1. Attempt any *two* passages. Read the passage and answer the questions that follow :

   (a) The trusted housemaid and the itinerant gardener, whose "day" it was, came running, the first to see and to scream with him, and the itinerant gardener tore his hands trying to get at the little boy. Then the man and his wife burst wildly into the garden and for some reason (the cat, probably) the alarm set up waiting against the screams while the bleeding mass of the little boy was hacked out of the security coil with saws, wire-cutters, choppers, and they carried it - the man, the wife, the hysterical trusted housemaid and the weeping gardener - into the house.

   (i) Name the chapter and the writer.

   (ii) Why the housemaid has been referred to as 'trusted'?

   (iii) Why was the boy bleeding?

   (iv) Write the synonyms of: Itinerant, Scream.

(b) "Tell me!"

The schoolmaster looked at him.

"Is the gendarme coming back tomorrow?"

"I don't know."

"Are you coming with us?"

"I don't know. Why?"

The prisoner got up and stretched out on top of the blankets, his feet toward the window. The light from the electric bulb shone straight into his eyes and he closed them at once.

(i) Name the chapter and the writer.

(ii) Who was supposed to go with the prisoner?

(iii) What is the context of the above conversation?

(iv) Make sentences of – Shone, Prisoner.

(c) Unoka, for that was his father's name, had died ten years ago. In his day he was lazy and improvident and was quite incapable of thinking about tomorrow. If any money came his way, and it seldom did, he immediately bought gourds of palm-wine called round his neighbours and made merry. He always said that whenever he saw a dead man's mouth he saw the folly of not eating what one had in one's lifetime. Unoka was, of course, a debtor, and he owed every neighbour some money, from a few cowries to quite substantial amounts.

(i) Name the chapter and the writer.

(ii) Whose father was Unoka?

(iii) What traits Unoka possessed?

(iv) Write the antonyms of- Incapable, Folly.

(2×5=10)

SECTION–B

2. Answer any *five* questions, selecting at least one from each unit.

UNIT–I

(a) What is the theme of *The Greatcoat* ?

(b) *The Guest* explores the themes of confinement and flight. Explain.

UNIT–II

(c) What is the message of the story *The Handsomest Drowned Man in the World* ?

(d) Why does Gordimer calls *Once Upon a Time* 'a bed time story' ?

UNIT–III

(e) Comment on the title of *Things Fall Apart.*

(f) Write a short note on the Ibo society.

(g) Write a short note on the character of Ikemefuna.

(5×5=25)

SECTION–C

Attempt all the questions :

3. Comment upon the appropriateness of the title *The Guest.*

Or

Draw the character sketch of Akaky as per your reading of *The Greatcoat.*

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

BHQ/M-16 **16189**

उपनिषद् शतपथब्राह्मणं च

Paper–XIV

Time : Three Hours] [Maximum Marks : 80

नोट : सर्वे प्रश्नाः क्रमशः उत्तरणीयाः।
सभी प्रश्नों का क्रमानुसार उत्तर दें।

1. निम्नलघूत्तरात्मक-प्रश्नाः उत्तरणीयाः।
निम्न लघु उत्तर वाले प्रश्नों के उत्तर दें।

(क) ईशोपनिषदि कति मन्त्राः सन्ति?
ईशापनिषद् में कितने मन्त्र हैं?

(ख) 'हिरण्मयेन पात्रेण सत्यस्यापिहितं .....।'
रिक्तपंक्तिं पूरयत?
खाली स्थान भरें।

(ग) कठोपनिषदि कति मन्त्राः सन्ति?
कठोपनिषद् में कितने मन्त्र हैं?

(घ) 'न वित्तेन तर्पणीयो .....।'
रिक्तपंक्तिं पूरयत?
खाली स्थान भरें।

(ङ) सम्पूर्ण-कठोपनिषदि कति वल्लयः सन्ति?
सम्पूर्ण कठोपनिषद् में कितनी वल्लियाँ हैं?

(च) '..... नावधीतमस्तु।'
रिक्तपंक्तिं पूरयत।
खाली स्थान भरें।

(छ) 'मनुमत्स्याख्यानम्' कस्मात् ग्रन्थात् उद्धृतम्?
'मनुमत्स्याख्यान' किस ग्रन्थ से उद्धृत है?

(ज) शतपथब्राह्मणे कति पन्थानः (अध्यायाः) वर्णिताः?
शतपथब्राह्मण में कितने पथ (अध्याय) वर्णित हैं?

(2×8=16)

2. (क) ईशोपनिषदः मन्त्रद्वयस्य व्याख्या कर्त्तव्या।
ईशोपनिषद् के **दो** मन्त्रों की व्याख्या करें।

(i) ईशा वास्यमिदं सर्वं यत्किञ्च जगत्यां जगत्।
तेनत्यक्तेन भुञ्जीथा मा गृधः कस्यास्विद् धनम्।।

(ii) कुर्वन्नेवेह कर्माणि जिजीविषेच्छतं समाः।
एवं त्वयि नान्यथेऽस्ति न कर्म लिप्यते नरे।।

(iii) अग्ने नय सुपथा राये अस्मान् विश्वानि देववयुनानि विद्वान।
यूयोध्यस्मज्जुहुराणमेनो भूयिष्णं ते नम उक्तिं विधेय।।

(5×2=10)

(ख) ईशोपनिषदः सारांश प्रस्तुवन्तु।
ईशोपनिषद् का सारांश प्रस्तुत करें। 6

3. कठोपनिषदः मन्त्रचतुष्टयस्य व्याख्या कर्तव्या।
कठोपनिषदः के **चार** मन्त्रों की व्याख्या करें?

(क) शान्तसंकल्पः सुमना यथा स्याद् वीतमन्युर्गौतमो माभि मृत्यो।
त्वत्प्रसृष्टं माभिवदेत्प्रतीत एतत्त्रयाणां प्रथमं वरं वृणे।।

(ख) न जायते म्रियते वा विपाश्चिन्नायं कुतश्चिन्न बभूव कश्चित्।
अजो नित्यः शाश्वतोऽयं पुराणो न हन्यते हन्यमाने शरीरे।।

(ग) उत्तिष्ठत जाग्रत प्राप्य वरान्निबोधत।
क्षुरस्य धारा निशिता दुरत्यया दुर्गं पथस्तत्कवयो वदन्ति।।

(घ) अग्निर्यथैको भुवनं प्रविष्टो रूपं रूपं प्रतिरूपो बभूव।
एकस्तथा सर्वभूतान्तरात्मा रूपं रूपं प्रतिरूपो बहिश्च।।

(ङ) यदा सर्वे प्रभिद्यन्ते हृदयस्येह ग्रन्थयः।
अथ मर्त्योऽमृतो भवत्येतावद्ध्यनुशासनम्।। (5×4=20)

4. (क) कठोपनिषदः प्रथमाध्यायस्य साराशं प्रस्तुवन्तु।
कठोपनिषद् के प्रथम अध्याय का सारांश प्रस्तुत करें। 6

(ख) कठोपनिषदः द्वितीयाध्यायानुसारं ब्रह्मविद्या विवेचयन्तु।
कठोपनिषद् के द्वितीय अध्याय के अनुसार ब्रह्मविद्या का विवेचन करें। 6

5. (क) मनुमत्सयाख्यानानुसार जलप्लावनकथा वर्णयन्तु।
मनुमत्स्याख्यान के अनुसार जलप्लावन की कथा का वर्णन करें। 10

(ख) शतपथब्राह्मणस्य प्रामुख्य महत्त्वं च वर्णयन्तु।
शतपथब्राह्मण की प्रमुखता व महत्ता का वर्णन करें। 6

Roll No. .....

Total Pages : 6

BHQ/M-16

16192

POLITICAL SCIENCE

(Comparative Constitutions of U.K. & U.S.A.)

Paper–I

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. What are the main features of the British Constitution ? 16

ब्रिटिश संविधान की मुख्य विशेषताएं क्या हैं?

2. Examine the power and position of British Prime Minister. 16

ब्रिटिश प्रधानमन्त्री की शक्ति और स्थिति की व्याख्या करें।

3. Discuss the main features of Social-Economic System of U.S.A. 16

संयुक्त राज्य अमेरिका की सामाजिक-आर्थिक व्यवस्था की प्रमुख विशेषताओं का वर्णन करें

4. Make a comparative study of the American Cabinet and the British Cabinet. 16

अमेरिकी मन्त्रिमण्डल और ब्रिटिश मन्त्रिमण्डल का तुलनात्मक अध्ययन करें।

5. Discuss the composition, power and position of the House of Commons. 16

हाउस ऑफ कॉमन्स की रचना, शक्ति और स्थिति का वर्णन करें।

6. Discuss the organisation and programmes of the *two* leading Political parties of England. 16

इंग्लैण्ड के **दो** मुख्य राजनीतिक दलों के सगंठन और नीतियों की व्याख्या करें।

7. Discuss the various factors which determine Voting behaviour in England. 16

इंग्लैण्ड में मतदान व्यवहार को प्रभावित करने वाले तत्वों का वर्णन करें।

8. What do you understand by Bureaucracy ? Discuss the characteristics of Bureaucracy in America. 16

नौकरशाही से आप क्या समझते हैं? अमेरिका में नौकरशाही की विशेषताओं का वर्णन करें।

9. Objective Type questions.

वस्तुनिष्ठ प्रश्न।

(a) "There is nothing like Constitution in U.K." Who said this ?

(i) Munro

(ii) De TocQuville

(iii) Jennings

(iv) Dicey.

अमेरिका के प्रथम राष्ट्रपति थे

(i) जैफरसन

(ii) बेंजामिन फ्रैंकलिन

(iii) जार्ज वाशिंगटन

(iv) हेमिल्टन।

(d) American Constitution is

(i) Flexible

(ii) Rigid

(iii) Flexible Rigid

(iv) None of these.

अमेरिका का संविधान है

(i) लचीला

(ii) कठोर

(iii) लचीला कठोर

(iv) इनमें से कोई नहीं।

(e) British Political System is

(i) Federal

(ii) Parliamentary

(iii) Unitary

(iv) None of these.

ब्रिटिश शासन प्रणाली है

(i) संघात्मक

(ii) संसदीय

(iii) एकात्मक

(iv) इनमें से कोई नहीं।

(f) Term of the House of Representative is

(i) One year

(ii) Three years

(iii) Four years

(iv) Two years.

प्रतिनिधि सदन का कार्यकाल है

(i) एक साल

(ii) तीन साल

(iii) चार साल

(iv) दो साल।

(g) Ist Speaker of House of Lords was

(i) Dayna

(ii) Thachar

(iii) Helene Hayman

(iv) Victoria.

लार्ड सदन की प्रथम स्पीकर थीं

(i) डायना

(ii) थैचर

(iii) हैलन हेमैन

(iv) विक्टोरिया

(h) Term of the House of Commons is

(i) Three years

(ii) Four years

(iii) Six year

(iv) Five years. (2×8=16)

कॉमन सभा का कार्यकाल है

(i) तीन साल

(ii) चार साल

(iii) छः साल

(iv) पाँच साल।

"इंग्लैण्ड में संविधान नाम की कोई वस्तु नहीं है।" यह कथन किसका है?

(i) मुनरो का।

(ii) डी० टॉकविल का।

(iii) जैनिंग्ज का।

(iv) डायसी का।

(b) How many Articles are there in the American Constitution ?

(i) 7

(ii) 77

(iii) 103

(iv) 111.

अमेरिका के संविधान में कितने अनुच्छेद हैं?

(i) 7

(ii) 77

(iii) 103

(iv) 111.

(c) Ist President of U.S.A. was

(i) Jafferson

(ii) Benjamin Franklin

(iii) George Washington

(iv) Hamilton.

Roll No. .....

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POLITICAL SCIENCE

(International Organization)

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. Define the meaning, nature and bases of International organization. 16

   अन्तर्राष्ट्रीय संगठन के अर्थ, प्रकृति और आधारों का वर्णन कीजिए।

2. "The League of Nations was the child of the First World War." Explain this statement. 16

   "राष्ट्र संघ प्रथम विश्व युद्ध का शिशु था।" इस कथन की व्याख्या कीजिए।

3. What are the powers and functions of General Assembly of U.N ? Explain.

   संयुक्त राष्ट्र महासभा के कार्य और शक्तियाँ क्या हैं? व्याख्या कीजिए। 16

4. Evaluate the role of U.N. Security Council in maintaining International peace and security. 16

   अन्तर्राष्ट्रीय शान्ति और सुरक्षा स्थापित करने में संयुक्त राष्ट्र सुरक्षा परिषद् की भूमिका का मूल्यांकन कीजिए।

5. Discuss the various methods of Coercive settlement of disputes under the U.N Charter. 16

संयुक्त राष्ट्र चार्टर के अन्तर्गत विवादों के बाध्यकारी समाधान की विधियों की व्याख्या कीजिए।

6. Write a detailed note on Peace-building. 16

'शान्ति स्थापना' पर एक विस्तृत नोट लिखें।

7. What do you understand by Democratization of U.N. System ? Discuss the main bases of it. 16

संयुक्त राष्ट्र व्यवस्था के लोकतन्त्रीकरण से आप क्या समझते हैं? इसके मुख्य आधारों का वर्णन कीजिए।

8. Discuss the main achievements and failures of U.N.O. 16

संयुक्त राष्ट्र संघ की मुख्य उपलब्धियों और कमजोरियों की विवेचना कीजिए।

9. Objective Type Questions.

वस्तुनिष्ठ प्रश्न।

(a) Who is the Father of Political Science ?

(i) Aristotle

(ii) Plato

(iii) Rousseau

(iv) None of the above.

राजनीति विज्ञान का पितामह कौन है?

(i) अरस्तू

(ii) प्लेटो

(iii) रूसो

(iv) उपरोक्त में से कोई नहीं।

(b) How many members are in UN General Assembly ?

(i) 191

(ii) 192

(iii) 193

(iv) 194.

संयुक्त राष्ट्र महासभा के कितने सदस्य हैं?

(i) 191

(ii) 192

(iii) 193

(iv) 194.

(c) Which country has the Veto power ?

(i) America

(ii) China

(iii) France

(iv) All the above.

किस देश के पास वीटो शक्ति है?

(i) अमेरिका

(ii) चीन

(iii) फ्रांस

(iv) ऊपरोक्त सभी।

(d) Second Heague Convention was organized in

(i) 1899

(ii) 1900

(iii) 1906

(iv) 1907.

द्वितीय हेग अभिसमय आयोजित किया गया था

(i) 1899 में

(ii) 1900 में

(iii) 1906 में

(iv) 1907 में।

(e) Who was the first Secretary General of U.N. ?

(i) Trygvelie

(ii) Ban ki Moon

(iii) B.B. Ghali

(iv) Dag Hammiarskjold.

संयुक्त राष्ट्र का प्रथम महासचिव कौन था?

(i) ट्रिग्वेली

(ii) बान की मून

(iii) बी.बी. घाली

(iv) डॉग हैमरशोल्ड।

(f) How many articles are in UN Charter ?

(i) 100

(ii) 111

(iii) 395

(iv) 250.

संयुक्त राष्ट्र चार्टर में कितने अनुच्छेद हैं?

(i) 100

(ii) 111

(iii) 395

(iv) 250.

(g) When was START-II Treaty signed?

(i) In 1990

(ii) In 1991

(iii) In 1992

(iv) In 1993.

स्टार्ट-II सन्धि पर हस्ताक्षर हुए थे

(i) 1990 में

(ii) 1991 में

(iii) 1992 में

(iv) 1993 में।

(h) What is the term of the Judge of International Court ?

(i) 6 years

(ii) 7 years

(iii) 8 years

(iv) 9 years. (8×2=16)

अन्तर्राष्ट्रीय न्यायालय के न्यायधीश का कार्यकाल है

(i) 6 वर्ष

(ii) 7 वर्ष

(iii) 8 वर्ष

(iv) 9 वर्ष।