Given a preference for boys over girls, how many more babies are boys than girls?

OR

Middle ages and also by the French Revolution...  

Again and again: by the Christian civilizations of the  

love in public affairs does not work. If it has been tried  

in private life: it is indeed the greatest of all things; but  

Respectfully but firmly, I disagree: Love is a great force  

was called to empire, and had governed long.  

This ancient found, who like Augustus young  

And when the suns are many, Morarcs must obey.  

All human beings are subject to decay.  

OR

attrition finds, or bonds with the remover to remove.  

imperium: Love is not love which alters when it  

Let me not to the marriage of true minds admit:

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

   Note: All questions are compulsory.

   Maximum Marks: 40

   Paper: A
   ENGLISH

S 01

TOTAL PAGES: 3
2. Describe the sheer animal beauty of Ralph. (1x5=5)

(f) How did Ram remember her family?

(g) Who was the banker?

(h) Why did Delhi require the money?

(i) Name the four Vans. Mainikes of.

(j) What does Nehru say about Gandhi?

(k) Apart from poetry, what else did Mahatma write?

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

OR

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

chapter?

(b) What is the principle of graded inequalities on which the

Hindu social order is based?

8. What is the principle of graded inequalities on which the

9. Do as directed:

Use correct form of the verb:

(a) Affection (change into adjective)

(b) Praise (change into verb)

(c) Affection (change into noun)

(d) Blood (change into verb)

(e) A (learn) speaker.

1. This movie last week. (see)

2. Do as directed:

What are the two neighbors in the poem 'Mending

Laugh and Be Merry'?

How can we make the world better?

Where is God found, according to Figaro?

All's over there. What is over? (The Last Mississipp)

Explain 'Greater Lord of all things, yes a prey to all',

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

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

When comes within the compass of time?

Answer in short any five of the following:

(1) 2-9=5

(2) 7x2=14
(a) It is two o'clock.
(b) There was a cigar in his hands.
(c) She is senior to me.
(d) The frog jumped into the pond.
(e) I am very near you back and call.

(b) Fill in the blanks with appropriate prepositions:

(a) I like to give useful presents.
(b) It gives me pleasure to do it.
(c) The door was opened by a servant.

3. Attempt any fifteen of the following sentences:

I. Attempt all questions.

Maximum Marks: 40

[Time: Three Hours]

ENGLISH-B

02-S BAE/S-17

02-S/300/KD/132
1. Write an application to the college principal for merit scholarship.

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

   (a) What is the thing that killed him was drink.

   (b) Three cars were involved in the accident.

   (c) They lost many items but there no

   (d) We should many times but there no

   (e) Who or whom

   (f) The lady

   (g) Do as directed

   (h) Many American workers

   (i) Bread and Butter

   (j) Anushi wrote

   (k) He eats very well

   (l) Supply the correct form of the verb

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

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

   (b) To whom is a player compared with?

   (c) How does a player get benched by games?

   (d) When do games give us?

Thus game helps in making a man a good citizen.

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

   (a) Role of Computers in Life.

   (b) A Visit to Historical Place.

   (c) My Favourite Book.

   (d) Hobbies.

   (e) Following:

   5. Translate the following into English:

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

   (a) The thing that killed him was drink.

   (b) Three cars were involved in the accident.

   (c) They lost many items but there no

   (d) We should many times but there no

   (e) Who or whom

   (f) The lady

   (g) Do as directed

   (h) Many American workers

   (i) Bread and Butter

   (j) Anushi wrote

   (k) He eats very well

   (l) Supply the correct form of the verb

02-S.300/KD/132
6. 

(2×6=12)

5.

(2×4=8)

4.

(2×5=10)

3.

(2×6=12)
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2. (8×2=16)

(i) एक ओलंप डाय नहीं लिया जा सकता, (क)

(ii) यदि आप नहीं कहते हैं तो नहीं कहते, (स)

(iii) अगर आप नहीं कहते तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(v) यदि आप उसे समझते हैं तो उसे समझते हैं, (स)

(vi) इसलिए ऊपर उसे समझना हेतु, (स)

(1)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(v) यदि नहीं कहते हैं तो कहते हैं, (स)

(vi) इसलिए ऊपर उसे समझना हेतु, (स)

(2)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(v) यदि नहीं कहते हैं तो कहते हैं, (स)

(vi) इसलिए ऊपर उसे समझना हेतु, (स)

(3)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(v) यदि नहीं कहते हैं तो कहते हैं, (स)

(vi) इसलिए ऊपर उसे समझना हेतु, (स)

(4)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(v) यदि नहीं कहते हैं तो कहते हैं, (स)

(vi) इसलिए ऊपर उसे समझना हेतु, (स)

(5)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(v) यदि नहीं कहते हैं तो कहते हैं, (स)

(vi) इसलिए ऊपर उसे समझना हेतु, (स)

(6)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(v) यदि नहीं कहते हैं तो कहते हैं, (स)

(vi) इसलिए ऊपर उसे समझना हेतु, (स)

7. (4×2=8)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(8)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(9)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(10)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(11)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(12)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(13)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(14)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(15)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

(16)

(i) यदि नहीं कहते हैं तो कहते हैं, (क)

(ii) इसलिए ऊपर उसे समझना हेतु, (स)

(iii) यदि नहीं कहते हैं तो कहते हैं, (म)

(iv) इसलिए ऊपर उसे समझना हेतु, (स)

Time: Three Hours

Maximum Marks: 80

SANSKRIT (Elective)

B.A./B.Sc.

Total Pages: 3

Roll No.:
I. Choose the correct answer for the multiple choice questions.

Complimentary Question (निष्पर्पण क्विज़)

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

Time: Three Hours

Maximum Marks: 80

Total Pages: 7

ROLL No. ................................................

From Harappan Age to 1966 A.D.

HISTORY OF HARAPAN

08-S.1
3

08-S/1.750/KD/137

(a) 1761
(b) 1568
(c) 1538
(d) 1526
(e) Second Battle of Panipat was held in

When Muhammad Chohan died?

2

08-S/1.750/KD/137

(a) 1761
(b) 1568
(c) 1538
(d) 1526

Who were Harsha Chohan's?

(c) 22.
(b) 18
(a) 12

Total number of Panjars is

(a) 1

(c) 22.
(b) 18
(a) 12

(c) 22.
(b) 18
(a) 12

(c) 22.
(b) 18
(a) 12

(c) 22.
(b) 18
(a) 12

(c) 22.
(b) 18
(a) 12
2. Analyze the main features of the Harappan civilization in

UNIT I (4-10)

1. Where Mahatma Gandhi was arrested in Haryana in 1919

   (a) Palwal
   (b) Kanal
   (c) Hansi
   (d) Rohtak

3. Who were Rauhayeas? Discuss their political stand in Haryana.

   (a) Kanal
   (b) Rewari
   (c) Ambala
   (d) Panipat

5. The Revolt of 1857 in Haryana started from

   (a) Palwal
   (b) Kanal
   (c) Rewari
   (d) Rohtak

7. George Thomas hailed from

   (a) France
   (b) Italy
   (c) Germany
   (d) England
On the outline map of Haryana, show the important regions.

UNIT-IV (विभाग-IV)

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

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

UNIT-II (विभाग-II)

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

5. What were the effects of invasions on Haryana?

4. Describe the invasions of Muhammad Ghori. Where were the
PART-A (40-60)

PART-B (60-80)

Note: Attempt the questions selecting at least one question from each part.

Time: Three Hours

Maximum Marks: 80

Paper-Il

POLITICAL THEORY

POLITICAL SCIENCE

ROLL NO. ...

TOTAL PAGES: 7
6. What is meant by National Integration? Discuss its different aspects.

(8×2=16)

7. What is meant by National Development? Discuss its different types.

(8×2=16)

8. Write notes on the following:

(a) Rights of Consumers.
(b) Meaning of Consumer Protection.


PART-C (16)
The Managerial Revolution: 

Who wrote The Managerial Revolution? 

(a) (i) 
(b) (i) 
(c) (i) 
(d) (i) 

Which of the following is the element of Power? 

(a) (i) 
(b) (i) 
(c) (i) 

Power and Authority are two separate concepts opposed each other. 

(a) (i) No relation between the two. 
(b) (i) Are the different names of one concept. 
(c) (i) Power and Authority
1. Define the term Sociology. Explain its significance and scope.

UNIT-I

2. Discuss the relationship of Sociology with Economics and

OR

I. Other relevant facts

UNIT-II (Introduction to Sociology)

SOCIOLOGY

B.A./S-17

10-S

Total Pages: 3

ROLL No. ...............
9. Write short notes on the following:

COMPULSORY QUESTION (10 MARKS)

UNIT-I (40 MARKS - I)

(a) Define Social mobility.
(b) Concept of Co-operation.
(c) Nuclear Family System.
(d) Types of Family.

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

UNIT-II (40 MARKS - II)

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

UNIT-III (40 MARKS - III)

2. What do you understand by kinship? What is the role being played by the kinship in society?

OR

- Define marriage and also explain the various types of marriages.
Economics

Indian economy is a (centrally/decentralized)


(a) Choose the correct option:

1. (a) average revenue under perfect competition

Economic problem arises due to (scarcity/abundance).

The wealth definition was given by (Marshall/Pigou).

Compulsory Question (मांगता क्वेश्चन)

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

Time: Three Hours

Maximum Marks: 80

() Paper-1

Micro Economics

12-5

Total Pages: 4

Roll No. 12-950/KD/140

UNIT-1

Discuss the importance of small scale industries in India.

UNIT-2

Discuss the role of Green Revolution.

UNIT-3

Give the main features of Indian economy.

16

Discuss the main economic reforms taken up in Indian economy.

the firm under Perfect Competition.

Give the properties of Monopoly and give equilibrium of

16

16

16
4. Give the properties of perfect competition and long run equilibrium of firm and industry under terms to trade.

UNIT-II (اقتصاد-II)

1. State and explain the law of variable proportions.

UNIT-I (اقتصاد-I)

1. Give the meaning of productive surplus.
2. Give the meaning of disguised unemployment.
3. Give the meaning of selling costs.
4. Give the meaning of an indifference curve.
5. Give the meaning of opportunity cost.

Attempt any four of the following:

(x)
(xi) Project-oriented agriculture is commercialized.

(2007-12/2012-17)

(2007-12/2012-17)

(viii)

(vi)

(A)

(A)

(A)

(A)

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2. (a) Verify Cayley-Hamilton theorem for the matrix \( A \) and
\[
\begin{bmatrix}
3 & 2 \\
0 & 1 \\
1 & 0
\end{bmatrix}
\]
is in normal form, where \( A \) is such that \( PAQ = A \).

(b) Find the non-singular matrices \( P \) and \( Q \) such that \( PAQ = A \).

3. (a) Show that every square matrix is uniquely expressible
and deduce the sum to infinity.

\[
\tan \left( \frac{q - \frac{q}{q+1} + \frac{q}{q+2} + \cdots + \frac{1}{q + 1}}{1 + \frac{1}{q + 1}} + \frac{1}{q + 1} \right)
\]

Sum the series.

(b) Prove that \( \tan \left( \frac{q + n}{q - n} \right) \) is a root of unity.

\[
\left[ x \cdot \frac{2}{\sqrt{3}} \cos \theta + x \cdot \frac{2}{\sqrt{3}} \sin \theta \right] e^{-\rho \omega + x} = x e^{\rho \omega + x}
\]

there

If \( a \) and \( b \) be the imaginary cube roots of unity, prove

\[
\frac{\cos \theta}{\sin \theta} = g + \gamma \alpha
\]

(a) If \( \alpha \) is the root of \( x^2 + 2x + 1 = 0 \), prove that

9.

SECTION

2/4

If \( \alpha \) is a power of \( 2 \), then prove that \( \alpha^2 \) is odd.

If \( \alpha \) is a higher power of \( 9 \) which divides \( 365 \).

3.

SECTION

2/4

Show that \( u^6 - v^6 \) is divisible by both \( u^3 \) and \( v^3 \).

If \( \alpha \) is a prime number and \( \nu \) is an integer such that \( d \alpha \equiv 1 \pmod{11} \), then \( \alpha = 11 \).

If \( \alpha \) is a prime number and \( \nu \) is an integer such that \( d \alpha \equiv 1 \pmod{11} \), then \( \alpha = 11 \).

3.

SECTION

2/4

By Descartes's method,

\[ 0 = 4x^4 + 4x^2 + 3x^2 - 1 = 1 \]

Solve the equation

\[
\gamma - \beta + \alpha + \gamma = \alpha + \gamma + \alpha - \beta, \quad x^2 + x^2 + x^2 = 0 \]

Form an equation whose roots are \( \gamma, \beta \) of the equation

5.

(a) If \( \alpha \) is the root of the equation

\[
\gamma - \beta + \alpha + \gamma = \alpha + \gamma + \alpha - \beta, \quad x^2 + x^2 + x^2 = 0 \]

Hence solve the problem completely.

and \( \beta x^3 + \gamma x^3 + \mu^x \)

\[ 0 = 8 - 2x^2 + 2x^2 - 2x^2 + 4x^2 \]

Find all the roots of the equation

\[
\gamma = \frac{y - x}{z} + \cdots + \frac{c - x}{z} + \frac{q - x}{b} + \frac{p - x}{a}
\]

SECTION

2/4

Transformation.

Also find the rank, index, signature and equation of

\[
\gamma x^3 + 2x^2 - 2x^2 + 4x^2 - 4x^2 + 2x^2 - 2x^2
\]

Diagonalize the quadratic form

\[
\begin{bmatrix}
13 & 13 \\
12 & 5
\end{bmatrix}
\]

where \( A \) is a proper orthogonal matrix

3.

Verify that the matrix \( A \) is proper orthogonal matrix.

\[
\begin{bmatrix}
2 & 2 \\
0 & 1
\end{bmatrix}
\]

Check whether the following system of equations is consistent.

4.

(a) Solve the equation

\[
\gamma x^2 + \beta x = 1, \quad x^2 = 2 + 2y + x
\]

2/4

\[ 2x^2 - y + a = 1, \quad x^2 = 2 + 2y + x \]

consistent or not. Solve if it is consistent.

(b)
Find the asymptote of the curve

\[
\frac{\theta + 1 + 2 \cos \theta}{24} = 1
\]

(a) Show that \( y = 0 \)

\[
\frac{u(\theta + x) u}{u y} - \frac{x^2}{y} - x + \log y = (y + x) \log
\]

(b) When

\[
\begin{aligned}
\nu &= x, \\
\nu &\neq x
\end{aligned}
\]

(c) \((x)f
\]

SECTION I

From each section

Note: Attempt all questions in all sections except one question

Maximum Marks: 26

Paper: BM-102

Mathematics

B.A.E/S-17

Roll No.

Total Pages: 3
\[ \frac{(x^2 - \xi)z}{2p} = \frac{(\xi - x)\xi}{2\xi p} = \frac{2 - \xi}{xp} \]

Solve the simultaneous equations \( \text{(b)} \)

\[ \lambda \xi + x\xi = \frac{ip}{\lambda p} \]

\[ \lambda \xi + x\xi = \frac{ip}{xp} \]

Solve the simultaneous equations \( \text{(a)} \)

\[ \text{SECTION - I} \]

\[ \xi = \xi + \frac{xp}{\xi^2 p} \cdot \csc x \cdot \xi \]

\[ \text{Solve the differential equation by the method of } \xi \]

\[ \xi \xi = \xi \xi (1 - \xi^2) + \frac{xp}{\xi^2 p} \]

\[ \text{SECTION - IV} \]

\[ \frac{x}{1} = \frac{xp}{\xi^2 p} + \frac{xp}{\xi^2 p} \cdot \xi \]

Solve \( \text{I} \)

\[ \text{SECTION - III} \]

\[ \frac{d_x}{d^2} = (x + \xi d)(\xi - x) \]

Solve the differential equation \( \text{I} \)

\[ \frac{d_x}{d^2} = \lambda p \]

Solve the differential equation \( \text{I} \)

\[ \frac{d_x}{d^2} = \lambda p \]

Solve the differential equation \( \text{I} \)

\[ \frac{d_x}{d^2} = \lambda p \]

Solve the differential equation \( \text{I} \)

\[ \text{SECTION - III} \]

\[ \frac{d_x}{d^2} = \lambda p \]

Solve the differential equation \( \text{I} \)

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Solve the differential equation \( \text{I} \)

\[ \frac{d_x}{d^2} = \lambda p \]

Solve the differential equation \( \text{I} \)
2.5 $|f'| = t$

Find $f'$ such that $\Delta f^2 + \Delta x^2 = 0$, where $t = 0$. (b)

2.5 $|f| = \text{differentiable}$ and $t$

Find an equation for the tangent plane to the surface $2x^2 - 3xy = 7$ at the point $(1, 1, 2)$. (q)

2.5 $[\begin{bmatrix} p & q & v \\ q & a & v \\ c & e & q \end{bmatrix}] = [q \times a] + c \times q$

and hence deduce that $[\begin{bmatrix} p & q & v \\ q & a & v \\ c & e & q \end{bmatrix}] = (q \times c) \times (c \times q)$

2. For any three vectors $p$, $q$, and $c$ show that $[\begin{bmatrix} p & q & v \\ q & a & v \\ c & e & q \end{bmatrix}] = (q \times c) \times (c \times q)$

SECTION I

Note: Attempt five questions in each section, select at least one question from each section.

Maximum Marks: 27

Time: Three Hours

MATHEMATICS

Paper: BMA-103
(Vector Analysis and Geometry)

17-S

RAE-S-17

Total Pages: 4

ROLL NO. 

10. Reduce $2x^2 + 2y^2 - 2x + 4xy - 4x - 2y$ to its standard form and find the coordinates of the vertex and axis.
SECTION I

1. (1) \[ f(x, y, z) = (z - \lambda + \gamma x)(x + \lambda + \gamma z) \]

Find the equation to the generation of the paraboloid.

2. (b) \[ x^2 + y^2 + 6z^2 = 8. \]

Find the real central circular section of the ellipsoid.

3. (a) \[ a^2 + b^2 + c^2 = 1. \]

Find the locus of the point from which three mutually perpendicular tangent lines can be drawn to the surface.

SECTION II

4. \[ \frac{x^2}{a^2} + \frac{y^2}{b^2} + \frac{z^2}{c^2} = 1. \]

Evaluate the first octant between \( z = 0 \) and \( z = 5 \).

5. \[ f(x, y, z) = f_1(x, y, z) - f_2(x, y, z) \]

Find the equation to the curve, center and the equation of the circle.

SECTION III

6. (a) \[ A \text{ sphere of constant radius } 2 \text{ passes through the origin.} \]

Find the name of the curve, center and the equation of the plane.

SECTION IV

7. \[ z = z + \gamma x + \gamma x + \gamma x \]

Evaluate the volume of the surface bounded by the coordinate planes and the plane

8. \[ z = 2 + x + y \]

Prove that the radius of the common circle is

IF two spheres of radii \( r \) and \( r \) touch orthogonally then

9. (a) \[ f(x, y, z) = (x^2 + y^2 + z^2) - 4x \]

Evaluate the volume of the solid bounded by the plane \( z = 0 \) and the paraboloid.
1. Attempt all parts : 80

UNIT-1 (Paper-1)

Each question carries equal marks.

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

Time : Three Hours

Paper-1

Elements of Public Administration

PUBLIC ADMINISTRATION

BAE/S-17

ROLL NO. ........................................

Total Pages : 3
8. How budget is prepared and passed in India. Discuss.

5. Discuss methods of judicial control over administration. Discuss.

UNIT-II (ظلم-II)

7. Describe composition, functions and role of utility councils.

UNIT-III (ظلم-III)

Discuss features, merits and demerits of government administration. Write an essay on communication.

UNIT-V (ظلم-V)

Define good governance. Discuss its elements.

Discuss. How Parliament exercises control over public corporations?
I. Analyse the main features of contemporary political theory.

UNIT A (Social)

II. Write a short note on the significance of the following:

1. Critically discuss the Marxist theory of origin of state.

3. Define State and discuss its essential elements.

4. Discuss the major features of professional political science.

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

Time: Three Hours

Maximum Marks: 80
UNIT-C (Unit-C)

UNIT-B (Unit-B)

UNIT-A (Unit-A)
Which one is an element of Justice?

(a) Locke
(b) Hobs
(c) Rousseau
(d) Machiavelli

Who used the word State for the first time?

(a) Machiavelli
(b) Locke
(c) Hobs
(d) Rousseau

Who supported the theory of Natural Rights?

(a) Locke
(b) Hobs
(c) Rousseau
(d) Machiavelli

None of these.

Both (a) and (d)
(A) None of these.
(B) Both (i) and (ii).
(C) To help poor
(D) To raise living standard

Which is the Target of Development?
(A) Лондон
(B) Tokyo
(C)成都
(D) Madrid

Which country has the Direct Democracy?
(A) Switzerland
(B) Italy
(C) France
(D) India
UNIT-1 (Question-1)

1. Define Physical Education. Explain is scope and importance.

UNIT-2 (Question-2)

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

UNIT-3 (Question-3)

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

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

Time: Three Hours

Maximum Marks: 50

HEALTH AND PHYSICAL EDUCATION

40-S

BAE/S-17

Total Pages: 3
4. Write down the History of Ancient Olympic Games and Asian Games.

UNIT-III (इकाई-III)

5. Explain in detail about postural deformities and their remedies.

6. Write down the meaning of personal hygiene and characteristics of healthy individual.

UNIT-IV (इकाई-IV)

7. Explain in detail about respiratory system.

8. Explain in detail about effects of exercise on circulatory system.

UNIT-V (इकाई-V)

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

10. Explain in detail about Balanced Diet and its constituents.
UNIT-1 (Music Instrumental)

Each question No. 3 to 10 carry 7 marks each.

Note: Attempt five questions in all. Select one question from each unit. Question No. 1 and 2 (Unit-I) carry 8 marks each.

Maximum Marks: 36

Time: Three Hours

MUSIC (INSTRUMENTAL)

BAE S-17

ROLL No.:

Total Pages: 3
UNIT-IV (_theme-IV)

Write about the classification of Indian musical instruments.

5. Write about the following terms: Vaddi-Samvad and Khanjali.

UNIT-III (_theme-III)

10. Write about the role of Ustad Vilayat Khan towards Indian music.
1. a) Reduce to a row Echelon form of the matrix.

\[ \begin{bmatrix} 2 & 5 & 1 & 6 \\ 5 & 2 & 3 & 7 \\ 1 & 4 & 0 & 3 \\ 2 & 1 & 3 & 4 \end{bmatrix} \]

2. Express \( A \) as a product of elementary matrices.

\[ \begin{bmatrix} 3 & 3 \\ 1 & 4 \\ 1 & 3 \end{bmatrix} \]

3. Prove that every Hermitian matrix \( A \) can be written as

\[ A = B + iC, \] where \( B \) is real and symmetric and \( C \) is real.

(b) Prove that the set of vectors \((0, 2, -4), (1, -2, -1)\) is linearly dependent.
SECTION III

5. (a) Find the condition that the roots of the equation 

\[ ax^2 + bx + c = 0 \]

may be in A.P.

(b) Find the given factor and the remainder when

\[ x^2 - 6x + 9 \]

is divided by \( x + 2 \).

4. (a) Find the quartic and the remainder when

\[ x^4 + x^3 - 2x - 1 \]

is divided by \( x + 2 \).

3. (a) Solve the equation \( x^2 + 2x - 3 = 0 \).
3. (a) Find all the asymptotes of the curve.

3. (b) Find the radius of curvature for the curve with the help of Taylor series for \( f(x) \).

2. (a) If \( f(x) \) is given by \( f(x) = 5x^2 + 2x + 3 \), find the value of \( x \) if \( f'(x) = 0 \).

3. \( 0 = \mu \sqrt{\mu^2 + u^2} - \mu \sqrt{\mu^2 + u^2} - 2 + \mu \sqrt{\mu^2 + u^2} \).

3. If \( \cos \theta = x \), show that \( \frac{x}{1} \) does not exist.

3. \( \lim_{x \to 0} \frac{1 - \cos x}{x} \).

SECTION 1

Note: Attempt five questions in all. Selecting at least one.

Maximum Marks: 30

[Paper: BM-102 (Calculus)]

MATHEMATICS

BAE/SE-17

Total Pages: 3

Roll No: .................................
SECTION

\[ \frac{2xz}{2p} = \frac{\kappa x}{\kappa p} = \frac{\varepsilon z^2 - \varepsilon x}{xp} \]

Solve \( q \) (a)

10. Solve the simultaneous equations:

\[ \varepsilon (x - 1) = \kappa - \frac{xp}{\kappa p} x + \frac{\varepsilon xp}{\kappa p} (x - 1) \]

Solve by the method of variation of parameters \( q \) (a)

\[ \kappa \varepsilon = \frac{xp}{\kappa p} x + \frac{\varepsilon xp}{\kappa p} \]

Solve by substituting first derivative \( q \) (a)

SECTION

9. Evaluate \[ \int \cos x \ dx, \quad \int \cos \phi \ dx, \quad \int \cos 2\theta \ dx \]

Obtain a Reduction Formula for \( \int \cos k \phi \ dx \) and hence

SECTION-II

Find the point of inflection on the curve

\[ (x - \varepsilon) (x - \phi) = \varepsilon x \]

Solve \( q \) (b)

Generalized chord. Find the area of the surface of the sphere and the area included between the curves and revolving the area obtained by revolving the area about the x-axis.

Find the volume of solid of revolution obtained by rotating the area included between the curves and revolving it.

Hence find its total area.

Find the area of a loop of the curve \( x = \sin \theta \cos \phi \) and hence find the length of the arc of the curve \( x = \sin \theta \) from \( \phi = 0 \) to \( \phi = \theta \).

Find the length of the arc of the curve \( x = \phi \) and hence find the length of the curve \( x = \phi \).
3. Then find the point \( P \) at the origin \( (1, 2) \).

\[
f(x) - f(1) = f'(1)(x-1) + f''(c)(x-1)^2 = 0\]

and

\[
0 = \frac{df}{dx} \cdot 1 = f'(1)
\]

3. Let \( p = \frac{dx}{dt} \) and prove that

\[
\frac{dp}{dt} = \frac{d^2x}{dt^2} + \frac{d^2y}{dt^2} + \frac{d^2z}{dt^2}
\]

constant magnitude is \( 0 \).

3. Prove that the necessary and sufficient condition for the vector function \( f \) to be a scalar valued is that few position vectors are coplanar.

3. Show that the four points having position vectors

\[
\begin{align*}
A &= (1, 2, 3) \\
B &= (4, 5, 6) \\
C &= (7, 8, 9) \\
D &= (10, 11, 12)
\end{align*}
\]

SECTION I

From each section.

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

Maximun Marks: 30

Time: Three Hours

Paper: B/W-109 (Vector Analysis and Geometry)

MATHEMATICS

52-S

B.A.ES-17

ROLL NO.

4

1. Prove that the equation

\[
x^2 + y^2 + z^2 = 1
\]

represents a sphere with centre at the origin and radius 1.

2. Find the equations of the straight lines passing through the point \( (1, 2, 3) \) and parallel to the axes.

3. Prove that the equation

\[
x^2 + y^2 + z^2 = 1
\]

represents a sphere with centre at the origin and radius 1.

4. Prove that the axes of the sections of the conicoid

\[
ax^2 + by^2 + cz^2 = 1
\]

which pass through the line

\[
xu + yv + zw = 0
\]

are axes.
SECTION

3. Find the focus of the parabola whose equation is

\[ y^2 = 4ax \]

3. Find the locus of the points which satisfy the equation

\[ x^2 + y^2 = 16 \]

3. Find the tangent planes to the surface given by the equation

\[ z = x^2 + y^2 \]

SECTION II

4. Evaluate the line integral

\[ \int_C (x^2 + y^2) \, ds \]

along the curve

\[ (x - 1)^2 + y^2 = 1 \]

SECTION III

5. Find the center and the lengths of axes of the conic

\[ \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \]

\[ \frac{x^2}{a^2} - \frac{y^2}{b^2} = 1 \]

Equations (a)

6. Apply Green's Theorem to evaluate

\[ \int_C (P \, dx + Q \, dy) \]

where

\[ P = x^2 + y^2 \]

\[ Q = x^2 - y^2 \]

SECTION IV

7. Apply the Cauchy-Riemann equations to show that

\[ \frac{\partial u}{\partial x} = \frac{\partial v}{\partial y} \]

and

\[ \frac{\partial u}{\partial y} = -\frac{\partial v}{\partial x} \]

8. Prove that if a function is harmonic, then it is constant.

9. Prove that a system of conical curves is a straight line.
3. Answer any four of the following questions in about 75-100 words each:

(a) What is the expression of sensibility? How is it measured?
(b) Explain in detail the myth of creation as told by the Mayans.
(c) What errors did Gandhiji make to become an English gentleman?
(d) How, according to Narmada Vema, is one language different from the other?

2. Write a paragraph in about 200 words on any one of the following:

(a) (12 x 12)
(b) (12 x 9)
(c) (12 x 6)
(d) (12 x 3)
(e) (12 x 1)

7. Underline the verb groups in the following sentences:

(a) A sineg.
(b) A patient.
(c) A watch.
(d) A job.
(e) A mind.

1. Translate any eight of the following words:

- Above
- Project
- Become
- Watch
- Possess
- Philosopher
- Hypogae

2. Fill in the blanks with suitable conjunctions:

(a) (12 x 12)
(b) (12 x 9)
(c) (12 x 6)
(d) (12 x 3)
(e) (12 x 1)
1. **Do you think the future looks bright?**

2. **What is the most important issue facing the world today?**

3. **What do you think is the most important lesson you have learned in life?**

4. **What is your favorite hobby?**

5. **What is your favorite book?**

6. **What is your favorite movie?**

7. **What is your favorite song?**

8. **What is your favorite food?**

9. **What is your favorite sport?**

10. **What is your favorite color?**

11. **What is your favorite season?**

12. **What is your favorite place to travel?**

13. **What is your favorite animal?**

14. **What is your favorite vacation destination?**

15. **What is your favorite holiday?**

16. **What is your favorite hobby?**

17. **What is your favorite sport?**

18. **What is your favorite book?**

19. **What is your favorite movie?**

20. **What is your favorite song?**
OR

(14) Who stands confirmed in full simplicity?

(15) How is Shadwell like the speaker?

(16) Who is Shadwell?

(17) Who is the speaker in these lines?

Who stands confirmed in full simplicity:

Shadwell, alone of all my sons is he

Nature in all this from his tender years:

Shadwell alone my perfect image bears.

Read the following extract and answer the questions that follow.

And hide his face amid a crowd of stars,
And peeped upon the mountains overhead
A little sad; how love is he,
And bending down beside the glowing bars,

They also serve who only stand and wait;
And post, once land and ocean without rest
Is knotty-house at his bidding speed;

I. Explain with reference to the context:

Note: Attempt all questions.

Maximum Marks: 80

Time: Three Hours

ENGLISH

702

GS/E.17

Total Pages: 4

ROLL NO. 0

8

Dramatic Monologue, Conceit, Simile, Satire, Allusion.

7.

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

Ceremony

10

1. Read: Vanish, Sportive, Twelvet, Reign, Deliverance, Office.

2. After: Dwelt, Consider, Ancien, Reign, Simplify, Glory.

Use any ten words in your own sentences:

30

The food we took with us was insufficient.

Examination.

(18) Which of the candidates passed their

(19) At the district

(20) An epidemic of measles

(21) His clothes

(22) His weakest subject:

Supply an appropriate verb in the blank spaces in the

(23) Quickly

(24) Which will get us there

(25) Easy

(26) This is by far the

(27) Which is the

(28) On or lead?

(29) Which is the

(30) Day of the year?

(31) Which is the

(32) Person in your family (old)

(33) Fill in the blanks with comparative or superlative degree

of the word given in the brackets:
There are some bricks that every year

(especially)

The worker is using our house.

(city)

mother.

(big)

The child because it cannot find its

Ain house person always the truth (tell)

The feelings in Italy.

(form)

(large)

fall in the banks with the simple or the picturesque

(see)

She will be ready August 10th.

(live)

are only two people he attended.

A Miss Johnson is aipher the Town Hall.

(lives)

Why uncle lives a large house.

(since)

Supply the correct preposition in the following

(a)

it is a shame to know that book away.

(i)

I find this exercise difficult.

(paragraph)

The price is more than we wished to

(!)

He is a intelligent boy.

(!)

We have had a good holiday.

(whose)

Insert feeling or rather in the following sentences.

(a)

The matter is outside our control, there is

(v)

You should be able to do the job if you have

(!!!)

I have spent nearly all my money, and have only
Page 17

[Image 0x0 to 612x792]
1. एक स्थान पर नाम लिखिए।
   उद: नाम नाम

2. दो लघु अन्य लेखों से संबंधित लेख लिखिए।
   उद: लेख लेख

3. चार अवस्थाओं का वर्णन कीजिए।
   उद: अवस्था अवस्था

4. इसके लिए कीजिए।
   उद: की की

5. इसका अर्थ लिखिए।
   उद: अर्थ अर्थ

[Maximum Marks: 80]

Time: Three Hours

PUNJABI (ELECTIVE)

CSE/D-17

708

Total Pages: 7

Roll No. ..........................
1. Basic-Pay, Compliment, Arrears Bill.
3. 2. 2. 2.
4. 2. 2. 2.
5. 2. 2. 2.
6. 2. 2. 2.
7. 2. 2. 2.
8. 2. 2. 2.
9. 2. 2. 2.
10. 2. 2. 2.
11. 2. 2. 2.
1. ጋወን ምክንያት (ዕ) በአንድ እና በኋላ በአንድ እና ምክንያት ነበር። ይ[text]
2. ጋወን ምክንያት (ዕ) በአንድ እና በኋላ በአንድ እና ምክንያት ነበር። ይ[text]
3. ጋወን ምክንያት (ዕ) በአንድ እና በኋላ በአንድ እና ምክንያት ነበር። ይ[text]
4. ጋወን ምክንያት (ዕ) በአንድ እና በኋላ በአንድ እና ምክንያት ነበር። ይ[text]
1. \[ \text{Maximum Marks: 80} \]

2. \[ \text{Time: Three Hours} \]

3. \[ \text{(Compulsory)} \]

SAANSKRIT

GSE/D-17

ROLL NO. .......
1. Maximum Marks : 80

Time : Three Hours

(Select)

SANSKRIT

GE-6/17

712

Roll No. ........................................

Total Pages : 3
I. Answer the following multiple choice questions:

Compulsory Question (अनिवार्य प्रश्न)

Note: Attempt five questions in all. Question No. 1 is compulsory. Select one question from each unit. For each question, select only one option.

Maximum Marks: 80

Time: Three Hours

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

(b) What is the capital of India?

(c) Which river flows through the city of Delhi?

(d) Who is the first Prime Minister of India?

(e) What is the national bird of India?

Option (i)

Ancient India: From Earliest Times to Gupta Age

HISTORY

718

GE/71-17

Total Pages: 7
Which of the following Vedas was the earliest?

A) Atharvaveda
B) Yajurveda
C) Samaveda
D) Rajaveda

Who wrote Mundra Rakshas?

A) Vaisali
B) Kaushambi
C) Jambul
D) Kaushmanda
16

2. Describe the literary sources of Ancient Indian History:

UNIT I

(a) (v) None of these
(b) (iii) Asoka
(c) (i) Chandragupta Vikram-I
(d) (ii) Harsh
(e) Reigned over the
Indian subcontinent

(v) Which Buddhist Council was held during the reign of

(a) (ii) Ashoka
(b) (iii) First
(c) (v) Second
(d) (iv) Third
(e) (i) Fourth
Harrapan civilization. Add a note also.

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

UNIT-1V (👥👥👥)

Who were Kushans? Describe the achievements of Kanishka.

6. Point out the main features of Maurya administration. (10+6=16)

UNIT-III (👥👥👥)

Write a note on Sixeyer Maharashtra.

5. Write a note on Sixeyer Maharashtra. (10+6=16)

UNIT-II (👥👥👥)

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

4. Give an account of the life and teachings of Lord Buddha. (10+6=16)

UNIT-I (👥👥👥)

Write a detailed note on Neolithic Age.

3. Write a detailed note on Neolithic Age. (10+6=16)
UNIT - I (Political Science)

1. Kindly discuss the various sources of Indian Constitution.

2. What is the importance and relevance of preamble?

3. What is the procedure of election of President of India?

UNIT - II (Political Science)

4. Explain the powers and functions of Prime Minister.

UNIT - III (Political Science)


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

Time: Three Hours

Maximum Marks: 80

Op. I (Indian Constitution)

CSE/D-17

723

Total Pages: 4

Roll No. 4

(1) Who presides over the Rajya Sabha at present?

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

(a) 26 January, 1949
(b) 26 January, 1948
(c) 26 January, 1947
(d) 25 January, 1949

(3) How many members of Constituent Assembly signed the document which came into being on 26th Jan?

(a) 282
(b) 283
(c) 250
(d) 280

(4) How many members of Constituent Assembly signed the document which came into being on 26th Jan?

(a) 282
(b) 283
(c) 250
(d) 280

(5) Name the five persons who are entitled to become a member of Indian Parliament?

(a) Mr. K. R. Narasimha Murty
(b) Mr. Ramagopal
(c) Mr. Narinder Modi
(d) Mr. Premendra Modi

(6) What is the date of Independence Day?

(a) 15 August
(b) 26 January
(c) 25 January
(d) 1 January

(7) What is the date of Republic Day?

(a) 26 January
(b) 15 August
(c) 25 January
(d) 1 January

(8) What is the date of Foundation Day of India?

(a) 15 January
(b) 26 January
(c) 25 January
(d) 1 January

(9) What is the date of Republic Day?

(a) 26 January
(b) 15 January
(c) 25 January
(d) 1 January
9. Objective type questions

9.1. Compulsory Questions

UNIT-V (VQ-4)

8. Where is the importance and relevance of Judicial Review?

UNIT-IV (Q-1)

7. Write a note on structure and position of Supreme Court

UNIT-I (Q-1)

6. What are the main features of Pancharatna Pay System?

5. Who was the president of Constituent Assembly of India?

4. When was the first meeting of Constituent Assembly?

3. In Indian Constitution, how many directive principles of state policy are granted?

2. Who is the leader of Lok Sabha?

1. Which is the official Constitution of India?

C. Rafqatulqahlan

D. Pr. Jawaharlal Nehru

E. Shri Vallabhbhai Patel

F. Who is the president of Lok Sabha?

G. Who is the president of Constituent Assembly of India?
Paper-I

Micro Economics

Economics

Total Pages: 7

Roll No. ..........................
Choose the correct answer: 

2. Compound Question (Arabic/English)

(a) (b) (c) (d) (e) (f)

Under Socialism, economic decisions are taken by

(d) None of the above.

(b) Both the above.

(p) Market

(g) Government

f) Internal decisions of the government

(c) Remaining stable

(e) Exceeds

(a) Duplicates

(c) None of the above.

(f) Matches

(b) Marshall

(a) Smith

(c) (d) (e) (f) (g)

Who gave material welfare definition of economics?
(a) Income Effect
(b) Elasticity of Supply
(c) Increase in Demand

Define the following:

5. Surplus

6. Decrease in Consumer
7. Decrease in Max
8. Hics
9. Consumer Equilibrium
10. Inelastic supply
11. Perishable goods
12. Price of curve

Match the following:

(3x2=6)

(5x1=5)

(3x2=6)

(5x1=5)

Which is external economy:

\[ \frac{\partial}{\partial T} = \partial \text{MW} \]
UNIT I (详细介绍-IV)

10. Define and discuss relations between various revenue curves.

9. Discuss the relation between various short run cost curves.

UNIT II (详细介绍-III)

6. Explain consumer surplus. How is it measured?

5. What is consumer equilibrium? Discuss it with the help of indifference curves.

UNIT III (详细介绍-II)

4. Define price elasticity of demand. How is it measured?

3. Discuss the scope of economics and its limitations.

UNIT IV (详细介绍-I)

8. What are isoungans? Discuss their properties.

7. Discuss law of variable proportions of production.
Demand for necessary goods is elastic.

Fill in the blanks with appropriate words.

Economics

When is Break-even point?

(c) Cost.

(d) Law of Supply.

(e) Explain the Law of Diminishing Marginal Utility.

(f) When is Price elasticity of demand?

(g) What is difference between Micro and Macro Economics?

(h) What is difference between Micro and Macro Economics?

(Compulsory Question (Arabic-English))

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

Maximum Marks: 80

Time: Three Hours

Paper-1

(Micro Economics-I)

ECONOMICS

CSE-D-17

ROLL NO. 4
UNIT I (A-Level-I)

3. Explain the exceptions of the law of demand. Why is it negatively sloped?

2. What is Mixed Economy? Explain the features, merits and demerits of Mixed Economy.

UNIT II (A-Level-II)

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

UNIT III (A-Level-III)

16. What are Internal and External economies and diseconomies and their causes of their applicability?

UNIT IV (A-Level-IV)

16. Explain why AC is U-shaped.

8. Explain with the help of tables and diagrams the concepts of Total, Average and Marginal cost in short-run.

9. What are Internal and External economies and diseconomies?
UNIT-I (Piano-I)

Note: Attempt all questions in all sections at least once.

From each unit, all questions carry equal marks.

Time: Three Hours

Maximum Marks: 40

Piano-1 (Theory)

MUSIC (Vocal)

Paper 1

GSEB 17

Total Pages: 3

Roll No. ............................
UNIT III

8.
10. Write about Rādha and Śrīkantha.

8.
9. Write in detail about Rāgākṣara.

8.
4. Write the definition of the following:
   (a) Kālā
   (b) Tūla
   (c) Śrīnātha
   (d) Viśāla
   and his contribution to music.

8.
7. Write the relationship of folk music and classical music.

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

8.
Write in detail about Śringāra.

(2+2+2=8)
UNIT-I (1-5)

1. Write the notation of any Rastakhami Cut of your syllables with two Tors.

2. Describe Raga Yaman with its Aroh, Avroh and Pakhan.

3. Write the notation of any Maestakhami Cut of your syllables with two Tors.

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

Maximum Marks: 40

Time: Three Hours

PAPER-I
(Instrumental)

MUSIC

GRADE-17

ROLL No: ........................................

TOTAL PAGES: 3
Write in detail about Gat and Shrut.

(D) Ghara

(C) Sampoorana

(B) Raga

(A) Swar

5. Write short notes on any two of the following:

UNIT-II (Rashtriya)

6. Discuss the structure of Sitar and its techniques.

UNIT-III (Vilayat Khan)

8. Write the contribution of Lied Vilayat Khan in the field of music.

10. Differentiate between Folk and Classical music.

11. Which Sitar players are from the Lucknow Gharana?

(4+4=8)

Dilbagh Khan

Ravi Shankar

Ustad Vilayat Khan

(4+4=8)

Write the notation of Teentāl and Ekāl with Ekān and Dihān Layakaris.

(4+4=8)
Describe the authority and responsibilities of an Office Manager.

4. Describe the authority and responsibilities of an Office Manager. Also explain the consultation vs. decentralization of office services.

3. Define Authority and Responsibility. Also explain the important departments of a modern office. Bring out the functions of a modern office. Bring out the importance of office management in a business.

2. What is Office Management? Explain the importance of office management in a business.

1. Write the importance of office management and explain the importance of office management in a business.

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

Maximum Marks: 80

Time: Three Hours

OFFICE MANAGEMENT

CSE/D-17

Total Pages: 3

Roll No. ....................
5. What is the status of an Office Manager? Discuss the qualifications of the Office Manager.

6. Discuss the importance of Office accommodation for a business.

7. Discuss the main factors involved in Office layout.

8. The efficiency of office employees is directly or indirectly affected by the conditions under which they are required to work. Elucidate this statement.


10. Communication is a very important function of any business. Discuss the characteristics of a good system of internal communication.
(a) \[
\begin{bmatrix}
  4 \\
  0 \\
  0 \\
\end{bmatrix}
\]
\[
\begin{bmatrix}
  0 \\
  3 \\
  0 \\
\end{bmatrix}
\]
\[
\begin{bmatrix}
  0 \\
  0 \\
  2 \\
\end{bmatrix}
\]

Find the rank of the matrix.

(b) \[x^3 + 2x + 1 = 0\]

Discuss the nature of the roots of the equation.

(c) Imaginary roots.

(d) Show that \[x^2 + 3x + 10 = 0\] has at least two

(e) Prove that \(a\) is an eigenvalue of \(A\).

(f) If \(a\) is an eigenvalue of a non-singular matrix \(A\), then

(g) Prove that \(A^{-1}\) is non-singular.

### Question

**Complementary Question**

**Equal marks.**

Select one question from each section. All questions carry

Note: Attempt five questions in all. Q. No. 1 is compulsory.

### Paper: BM-111

**TIME: THREE HOURS**

**PAPER: BM-111**

**ALGEBRA**

**GSE/D-17**

**Roll No.**

**Total Pages: 4**

**SECTION A**

- (a) Show the equation \(x^2 + 8x + 8 = 0\) has at least

- (b) Derivative method.

- (c) Solve the equation \(x^p - 4x^q - 4x^p = 15 = 0\) by

- (d) Apply Descartes's method to solve the equation

- (e) Solve the equation \(x^3 - 4x^2 - 50 + 24 = 0\).

- (f) Apply Descartes's method to solve the equation

---
2/4
Find the equation whose roots are $\alpha - p$, $\beta - p$, and $\gamma - p$.

Given that $\alpha$, $\beta$, and $\gamma$ are the roots of the equation:

$$0 = \lambda + \alpha x + \beta x^2 + \gamma x^3$$

If $\alpha$, $\beta$, and $\gamma$ are the roots of the equation:

$$0 = 15x^4 - 8x^3 - 34x^2 - 33x - 10$$

(a) Solve the equation.

(b) If $\alpha$, $\beta$, and $\gamma$ are orthogonal and is one of even.

2/4
Given that it has a multiple root.

$$x^4 - 9x^3 + 4x^2 + 12 = 0$$

(a) Solve the equation.

(b) Prove that any two characteristic vectors corresponding to two distinct characteristic matrices are orthogonal.

SECTION II

2/4
For what value of $\lambda$ does the system:

$$\begin{bmatrix} 1 & \lambda & 0 \\ 1 & 2 & 3 \\ 1 & 2 & 1 \end{bmatrix}$$

has no solution.

4. (a) Prove that $\lambda = 2$.

SECTION III

2/4
Semi-definite matrix.

Prove that $9\alpha^2 + 9\beta^2 + 9\gamma^2 - 4\alpha x + 6\alpha x - 12x^2 - 4\beta x + 6\beta x - 12x^2 - 4\gamma x + 6\gamma x - 12x^2$ is positive.

2/4
Prove that $9\alpha^2 + 9\beta^2 + 9\gamma^2$ is positive.

(a) Reduce the bilinear form.

(b) Prove that $9\alpha^2 + 9\beta^2 + 9\gamma^2$ is positive.

(c) Prove that $9\alpha^2 + 9\beta^2 + 9\gamma^2$ is positive.

(d) Prove that $9\alpha^2 + 9\beta^2 + 9\gamma^2$ is positive.

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

SECTION I

2/4
Find the non-singular matrices $P$ and $Q$ such that $PAQ$ is in normal form where $A = \begin{bmatrix} 2 & 0 & -2 \\ 0 & 3 & 2 \\ -2 & 2 & 3 \end{bmatrix}$.

(b) Prove that $P(AQ) > \beta(AQ)$ and $P(AQ) > \beta(BQ)$.

2/4
The rank of each matrix. Prove it "e".

(a) Prove that the product of two matrices cannot exceed...
2. \[ 0 = \nu (\varepsilon w + \varepsilon u) - \lambda (\varepsilon x(1 + \varepsilon n) - \varepsilon x - 1) \]
proven that [\[ \phi \]

3. \[ |x| + |x| = 0 \]
Continuously but not derivable at \( x = 0 \).

2. (a) Show that the function defined by \( f(x) = x \)

SECTION I

1. (c) Find the area bounded by \( y = 4x \) and its base rectangular.

2. (d) Define curvature of a circle.

3. (e) \[ u(x) = \frac{1}{x} \]

4. (f) \[ \int u(x) \log x \, dx = \int u(x) \log x \, dx \]

5. (g) \[ \int u(x) \log x \, dx = \int u(x) \log x \, dx \]

6. Evaluate \( \lim_{x \to 0} \frac{x}{\varepsilon} \)

6. (a) Complementary Question

7. (b) Select one question from each section.

Note: Attempt five questions in all. Question No. 1 is

Maximum Marks: 26

[Maximum Marks: 26]
Find the volume of the solid formed by the revolution about its base of one arch of the cycloid.

Find the area of a loop of the curve $z = ho^2$ and the ellipse $x^2 + y^2 = 9$.

Find the area common to the circle $x^2 + y^2 = 4$ and the ellipse $x^2 + y^2 = 9$.

Find the length of the arc of the parabola $y = x^2$.

Calculate by line integration.

Hence evaluate $I$.

Hence evaluate $I$.

Hence evaluate $I$.

Trace the curve $f = 2(1 - \sin \theta)$. 

Find the points of intersection on the curve.

Find the pole of the chord of curvature through the pole of the parabola.

Find the asymptotes of the curve $y = \theta \cos \theta \sin \theta$. 

Prove that with the help of Taylor's series for $f(x) = x^n$.

Prove that $\frac{3}{2(2-x)} + \frac{\cos 2 \cot 2}{2(2-x)^2}$. 

Find the value of $\frac{1}{6} \int f(x) f'(x) dx$ for $f(x) = x^2$.
5. \( 2x^2 + 3y^2 - 6x + 4 = 0 \) are conical
2. Prove that the conics \( x^2 - 4x + 2y^2 + 2 = 0 \) and

UNIT III

Find the pole equation of a conic with forms as pole.

UNIT I

compulsory

from Unit I to Unit IV. Question NO. 9 (Unit I-V) is
Note: Attempt five questions in all. Select one question each

Maximum Marks : 27

Time : Three Hours

Paper : BM-I13

SOLID GEOMETRY

GSE-D-17

Toatl Pages : 3
UNIT I

5.

Find the equation of the hyperboloid.

8.

Find the equation of a right circular cylinder of radius 2 whose axis is the line 

UNIT II

5.

Find the equation of the plane which cuts the conicoid

UNIT III

5.

Find the equation of the plane which cuts the conicoid

(Comprehension Question)
(v) Write a short note on Article 352.

(iii) Describe the two functions of Prime Minister.

(iv) Write the two fundamental duties.

(i) Write down the Preamble of Indian Constitution.

Compulsory Question

Note: Attempt five questions in all. Selecting one question.

Maximum Marks: 80

Time: Three Hours

Paper - I

Indian Constitution

POLITICAL SCIENCE

CSE/D-17

Total Pages: 3
UNIT II (Hindi-III)

9. Give arguments for and against Judicial Activism.

10. Describe the organisation and jurisdiction of Supreme Court of India.

UNIT II (Hindi-IV)

8. Describe the organisation and jurisdiction of Supreme Court of India.

UNIT II (Hindi-V)

7. Describe the main provision of the 73rd Amendment of Indian Constitution.

UNIT II (Hindi-VI)

6. Discuss the composition, power and functions of Lok Sabha.

UNIT III (Hindi-IV)

5. Explain the power, functions of the Chief Minister of a state.

UNIT III (Hindi-V)

4. Describe the power, functions and position of the President.

UNIT III (Hindi-VI)

3. Critically examine the Fundamental Rights under the Indian Constitution with this statement & explain.

UNIT I (Hindi-I)

2. Indian Constitution is a blend of Western. Do you agree?

2. (i) Who is the Chief Justice of India? (2x8=16)

2. (ii) What is Judicial Review?

2. (iii) In which Article there is a provision of Amendment?
4 \qquad 7^{84} 1.4200/200/KD/81
\begin{align*}
4 \quad a &= \frac{1}{2} \left( \frac{x^2 + 1}{x + 1} \right)^{1/2} \\
\log \left( \left( \frac{x^2 + 1}{x + 1} \right)^{1/2} + x \right) &= x \quad (q)
\end{align*}

4 a. Discuss the continuity and differentiability of the function \( f(x) = x^2 - x \), in the interval \([0, 1] \).

SECTION I

\begin{enumerate}
\item Find the length of a loop of the curve \( r = \theta^2 - 1 \).
\item Define a singular point.\end{enumerate}

I. (a) Evaluate \( \int \lim_{x \to 0} \frac{|x|}{x} \).

\textbf{Compulsory Question}

\textbf{Note:} Attempt five questions in all. Question No. 1 is compulsory. Select one question from each section. Maximum Marks: 40

Paper: B/E-D.12
CALCULUS

\textbf{ROLL NO.} 784

\textbf{Total Pages: 3}
6. (a) Trace the curve $x = a \theta (1 + \cos \theta)$, and hence evaluate $\int x \cos x \, dx$.  
   
5. (a) Show that in an ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$, the radius of curvature at the end of the major axis is equal to the semi-latus rectum of the ellipse.  
   
(b) Show that every point, in which the sine curve $y = e^x \cos x$ meets the axis of $x$, is a point of inflexion.  

SECTION III

4. (a) Find the approximate change in the value of $\int_0^1 x^2 \cos x \, dx$, when $x$ changes from 3 to 3.001.  
   
(b) Find the asymptotes of the curve $x^2 - 3y^2 + 7x = 8$.  

SECTION IV

9. (a) The circle $x^2 + y^2 = a^2$ is revolved about the $x$-axis. Find the volume of the sphere so formed.  

(b) Find the surface of the solid generated by the revolution of the astroid $x^{2/3} + y^{2/3} = a^{2/3}$ about the $x$-axis.  

8. (a) Trace the curve $y = 3(x^3 - 3x^2 + 7x - 8)$. 

(b) Find the intrinsic equation of the cardioid $r = a(1 - \cos \theta)$.  

SECTION II

4. (a) Find all the asymptotes of the curve $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$, the radius of curvature at the semi-latus rectum of the ellipse.  

(b) Find the asymptotes of the curve $\frac{(x + y)^2}{a^2} - \frac{(x - y)^2}{b^2} = 1$.  

3. (a) Expand $\sin x$ and $\cos x$ in powers of $x$, and hence find $\cos 18^\circ$ up to four decimal places.  

7. (a) Find that the loop of the curve $x = r^2 \cos \theta, y = r^2 \sin \theta$ is of length $4\sqrt{3}$.  

4. (a) Trace the curve $y = a^2 - x^2$, and show that the area of the loop is $\frac{8a^2}{3}$.  

(b) Find the area common to the curve $r = a(1 - \cos \theta)$ and the cardioid $r = a(1 + \cos \theta)$.  

(b) Find the volume of the sphere so formed.
UNIT I

3/4 Find the polar equation of conic with focus as a pole.

3/4 Prove that the conics $x^2 - y^2 - 4x + 2y + 2 = 0$ and $x^2 + x^2 + 4x - 6y + 4 = 0$ are confocal.

UNIT II

3/4 From Unit I to Unit IV, Q. No. 9 (Unit-V) is compulsory.

Note: Attempt five questions in all. Select one question each.

Maximum Marks: 40

Time: Three Hours

PAPER: BM-113
SOLID GEOMETRY

785

CSE/D-I
UNIT-IV

4. Also find the point of contact paraboloid $3x^2 - 2y^2 = 6z$. Also find the point of

Show that the plane $8x - 6y - 2z = 2$ touches the

UNIT-V

4. Find the equation of the sphere of the form

$$Z = \frac{L}{Z^2 - x^2 - 2z^2 + 2x - 2z^2 + z^2}$$

with respect to the co-ordinates of the

4. Ellipsoid is constant

any three mutually perpendicular diameters of an

prove that the sum of the squares of the reciprocals of

4. Find the equation of the cone given by the equation

$$2x - 2y - z^2 + 2y = 0, 3x - z^2 + 2y = 0, 3x - 3y = 0$$

which pass through the line

4. Find the equation of the equation of the tangent planes to

UNIT-III

4%. Orthogonally the sphere $x^2 + y^2 + z^2 = 1$ and find

4% find the equation of the sphere which touches the plane

axes and which passes through the point $(1, 2, 3)$ whose

vertex is $(2, -3, 0)$, and makes equal angles with the

4. Find the equation of the right circular cone, whose
Capacitor of 1.5pF will be 1 nF.

(e) At what frequency, the capacitive reactance of a unit of Poynting vector.

Discuss the significance of Poynting theorem. Give S.I.

(d) Such a material.

(c) What are Paramagnetics materials? State Curie Law for permanent magnets.

(b) Why is steel a better choice than soft iron for making fields.

(a) Distinguish between Solenoidal and Irrotational vector.

I. Attempt any four parts:

Complimentary Question

Non-programmable calculator is allowed.

All parts of a question at one place only. Use of simple complimentary. Select one question from each unit. Attempt Note: Attempt five questions in all. Question No. 1 is Maximum Marks: 40

Time: Three Hours

Paper-II

(Electromagnetics and Electromagnetic Theory)

PHYSICS

CSI/D-17

791

Total Pages: 4

ROLL NO. .........................

(2 × 4 = 8)

3.

(a) Define Root mean square value of a.c. and show that peak value of a.c. is \(\sqrt{2}\) times the root mean square value of a.c.
UNIT-I

1. Discuss the applications of the types of circuits.
2. Explain the shape of graph with reference.
3. Draw graph showing variation in resonant frequency. Analyze a sets resonant circuit to derive relation for the inductance of choke required.
4. An electric lamp runs at 80 V d.c. and consumes 10 A. (a) If it is used with 100 V, 50 Hz a.c. supply. Calculate current and resistor R, in series, draw the phasor diagram. (b) When is Current temperature of a ferromagnetic material equal to zero? (c) What is Curie temperature of a ferromagnetic material? (d) What is magnetic susceptibility? Show that hysteresis loss per unit volume per cycle of magnetization in a ferromagnetic material is equal to the area under B-H curve. (e) The magnetic susceptibility of platinum is 30 x 10^-5.

UNIT-II

1. Derive the relation \( d \times B = 4\pi I \), where \( B \) is magnetic induction and \( I \) is current density vectors.
2. Derive expression for mechanical force and electrical field on the surface of a charged conductor.

UNIT-III

1. Derive the following Maxwell's equations:
2. Discuss the physical significance of the gradient of a scalar.
(e) Why are $s$-orbitals filled first than $p$-orbitals?
(f) VSEPR theory.
(g) Explain the geometry of $ICl_2^-$ ion on the basis of which is more stable between $NO$ and $N_2$?
(h) Which is more stable between $AlCl_3$ and $AlCl_4^-$?
(i) Give an expression for Schrödinger wave equation.

Q. 3 (a) Why are $d$-orbitals filled before $f$-orbitals?
(b) Which has higher melting point between $NaF$ and $NaCl$?
(c) Which has smaller size between $H^+$ and $He$?
(d) Give an expression for Schrödinger wave equation.

**Compulsory Question**

**Section A**

Compulsory: Select two questions each from Section A.

**Section B**

Compulsory: Select two questions each from Section B.

**Note:** Attempt five questions in all. Question No. 1 is compulsory. Maximum Marks: 32

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792/12.600/KD/87

1 x 8 = 8

(1) Why are $s$-orbitals filled first than $p$-orbitals?
(2) VSEPR theory.
(3) Explain the geometry of $ICl_2^-$ ion on the basis of which is more stable between $NO$ and $N_2$?
(4) Which is more stable between $AlCl_3$ and $AlCl_4^-$?
(5) Give an expression for Schrödinger wave equation.

3 (a) Why are $d$-orbitals filled before $f$-orbitals?
(b) Which has higher melting point between $NaF$ and $NaCl$?
(c) Which has smaller size between $H^+$ and $He$?
(d) Give an expression for Schrödinger wave equation.

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792/12.600/KD/87

4 x 1 = 4

(1) Give the difference between $n$-type and $p$-type semiconductors.
(2) What are Feinberg rules?
(3) Lattice energy of $MgF_2 = -2922.5$ KJ mol$^{-1}$. (electronic affinity of fluoride $= -332.6$ KJ mol$^{-1}$. (ionization energy of Mg (IP) $= 2186.0$ KJ mol$^{-1}$)
SECTION A

2. What is Hund's rule of maximum multiplicity?
3. What is the significance of the uncertainty principle in daily life?
5. Discuss several factors on which electron affinity depends. On which will it depend on?
6. Explain the effect of electron affinity on the shape of the hybridised molecule. According to VSEPR theory, oxygen molecule is diatomic. Explain how it is consistent with the Lewis structure.
7. Explain the structure of xenon difluoride XeF₂ on the basis of hybridisation.
8. Explain the structure of SF₄ on the basis of VSEPR theory.
9. a) Calculate the heat of formation of MgF₂ from the following data:

\[ \Delta H_f \text{ (MgF}_2\text{)} = 136.4 \text{ kJ mol}^{-1} \]

b) Calculate the heat of formation of MgF₂ from the following data:

\[ \Delta H_f \text{ (MgF}_2\text{)} = 136.4 \text{ kJ mol}^{-1} \]

temperature causing:

\[ \text{Dissociation energy of fluorine} = 158.8 \text{ kJ mol}^{-1} \]

10. Which has a higher ionisation energy between beryllium and boron? Explain.
11. a) Which are representative and inner transition elements? Explain. 

b) Explain lanthanide and actinide contraction in non-stoichiometric crystals.

12. Explain lattice defects in non-stoichiometric crystals and their consequences.

SECTION B

12. Which has high ionisation energy between beryllium and boron? Explain.
14. Explain Lanthanide and Actinide Contraction in Non-Stoichiometric Crystals.
15. Explain Lattice Defects in Non-Stoichiometric Crystals and Their Consequences.
16. Discuss Several Factors on Which Electron Affinity Depends. On Which Will It Depend On?
18. Explain the Structure of Xenon Difluoride XeF₂ on the Basis of Hybridisation.
19. Explain the Structure of SF₄ on the Basis of VSEPR Theory.
20. Calculate the Heat of Formation of MgF₂ from the Following Data:

\[ \Delta H_f \text{ (MgF}_2\text{)} = 136.4 \text{ kJ mol}^{-1} \]

b) Calculate the Heat of Formation of MgF₂ from the Following Data:

\[ \Delta H_f \text{ (MgF}_2\text{)} = 136.4 \text{ kJ mol}^{-1} \]

Temperature Causing:

\[ \text{Dissociation Energy of Fluorine} = 158.8 \text{ kJ mol}^{-1} \]

11. a) Which Are Representative and Inner Transition Elements? Explain.

b) Explain Lanthanide and Actinide Contraction in Non-Stoichiometric Crystals.

12. Explain Lattice Defects in Non-Stoichiometric Crystals and Their Consequences.
2. a) Write the balanced chemical equation for the reaction between phosphorus and oxygen to form phosphorus pentoxide.

b) Write the balanced chemical equation for the reaction between nitrogen and oxygen to form nitrogen dioxide.

c) Write the balanced chemical equation for the reaction between sulfur and oxygen to form sulfur dioxide.

2. a) Write the balanced chemical equation for the reaction between magnesium and hydrochloric acid to form magnesium chloride and hydrogen gas.

b) Write the balanced chemical equation for the reaction between calcium and sulfuric acid to form calcium sulfate and hydrogen gas.

c) Write the balanced chemical equation for the reaction between iron and hydrochloric acid to form iron(II) chloride and hydrogen gas.

2. a) Write the balanced chemical equation for the reaction between zinc and sulfuric acid to form zinc(II) sulfate and hydrogen gas.

b) Write the balanced chemical equation for the reaction between copper and nitric acid to form copper(II) nitrate and nitrogen gas.

c) Write the balanced chemical equation for the reaction between silver and hydrochloric acid to form silver chloride and hydrogen gas.

2. a) Write the balanced chemical equation for the reaction between sodium and water to form sodium hydroxide and hydrogen gas.

b) Write the balanced chemical equation for the reaction between potassium and sulfuric acid to form potassium sulfate and hydrogen gas.

c) Write the balanced chemical equation for the reaction between lithium and hydrochloric acid to form lithium chloride and hydrogen gas.

2. a) Write the balanced chemical equation for the reaction between calcium and sulfuric acid to form calcium sulfate and hydrogen gas.

b) Write the balanced chemical equation for the reaction between magnesium and hydrochloric acid to form magnesium chloride and hydrogen gas.

c) Write the balanced chemical equation for the reaction between iron and sulfuric acid to form iron(II) sulfate and hydrogen gas.

2. a) Write the balanced chemical equation for the reaction between zinc and sulfuric acid to form zinc(II) sulfate and hydrogen gas.

b) Write the balanced chemical equation for the reaction between copper and hydrochloric acid to form copper(II) chloride and hydrogen gas.

c) Write the balanced chemical equation for the reaction between silver and hydrochloric acid to form silver chloride and hydrogen gas.
(b) Describe the difference between the terms (ii) and (iii).

10. (a) Name one condition under which the crystals of the same substance may give different shapes of the crystals.
(b) Devise Bragg's equation for the diffraction of X-rays.
(c) State the number of particles per unit cell in each plane separated by $0.5 \times 10^{-10}$ m.
(d) What is the angle $\theta$ of X-rays of 1.424 $\times 10^{-10}$ m. which will give a second order reflection by Bragg's equation.
(e) Determine the temperature at which the hydrogen molecule will have an average velocity of diameter of oxygen molecule is $2 \times 10^{-8}$ cm.
(f) Calculate the mean free path of oxygen molecules at $0^\circ$ C.
(g) Briefly explain the terms (i) Kinetic mean square velocity, (ii) Most probable velocity.
(h) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(i) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(j) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(k) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(l) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(m) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(n) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(o) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(p) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(q) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(r) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(s) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(t) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(u) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(v) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(w) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(x) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(y) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
(z) $\frac{\text{Losec}}{2}$ less specific volume under identical conditions.
2. (a) Explain with one example each how to justify the acidic character of carboxylic acids in terms of resonance.

(iii) Which alkene cannot be prepared by Wittig reaction?

(iv) Why NH₃ acts as nucleophile?

(v) Central carbon is sp², sp³, or sp?

(vi) In which reaction intermediate the hydration of water takes place?

(vii) What is plane polarized light?

(viii) Name the process of separation of racemic mixture.

(ix) Define resonance energy.

(i) Give IUPAC name of mesomerism and no-bond mesomerism.

(ii) How would you prepare the following:

9. (a) Penaeus accl.

(ii) Ethyl bromide.

(iii) Cyclopropene.

(b) How can you synthesize n-butane from the following n-hexane with even no. of carbon atoms melts at higher temp. than those with odd no. of carbon atoms?

(c) What is Corey-House reaction? Discuss its advantages.

8. (a) Why is nitro-cumene more stable than nitrobenzene?

(ii) How to explain the stability of carbocations on the basis of different types of hybridizations?

(iii) What is primary radical? Explain free radical, explain structure, hydration, and different types of hybridizations.

(vi) Why is primary carboxylic acid more stable than single?
5. Draw Newman projection formula of different conformation of r-butane and give their probability order.

6. (a) Write Lewis structures of H₂O, BF₃, NH₃, CH₄, NO₂.
   (b) Give the reasons for delocalization of π-electrons and select them from the following.
   (c) Explain with examples.

7. (a) Explain molecular chirality. Is it the necessary and sufficient condition for a molecule to show optical activity?
   (b) Differentiate between Enantiomers and Diastereomers.
   (c) Explain why E and Z configurations are more stable than all other configurations.

8. (a) Write Lewis structures of H₂O, BF₃, NH₃, CH₄, NO₂.
   (b) Give the reasons for delocalization of π-electrons and select them from the following.
   (c) Explain with examples.

9. (a) Write Lewis structures of H₂O, BF₃, NH₃, CH₄, NO₂.
   (b) Give the reasons for delocalization of π-electrons and select them from the following.
   (c) Explain with examples.

10. (a) Write Lewis structures of H₂O, BF₃, NH₃, CH₄, NO₂.
    (b) Give the reasons for delocalization of π-electrons and select them from the following.
    (c) Explain with examples.
OR

How will then God call us?
When will the cloud of our skin vanish?
What are men's black bodies and summbrnt faces?
Whose beams of love we may learn to bear?
Who are the poet and the poet?

Questions:
And round my golden ken like Jams Resoloe.
Sayings: "Come out from the grove, Fly love and care;
The cloud will vanish we shall hear his voice,
For when our souls have learned the need to bear
Is she a cloud, and like a shady grove,
And these black bodies and his sumbrum face
They may learn to bear the beams of love;
And we are put on earth a little space.

1. Write the passage given below and answer the questions that follow.

Note: Attempt all questions.

Maximum Marks: 40
Time: Three Hours

English
GCSE/DL.17

ROLL NO. ..........................................

798
Total Pages: 6
Great Lord of all things, yet a prey to all, 
Great Lord to rise and fall to fall! 
Shall by himself released, or displeased? 
Choice of thought and passion, all conscribed.

And better than they stroke, why swell with love? 
And poppy, or chamomile can make up sleep as well. 
And death with poison, war and sickness dwell, 
Then an slave to fate, chance, kings and despair mean.

What does the poet mean by "true insensible things?" 
What kind of life will she live? 
How will she go up the mountain? 
What will she do across the lawn? 
Who will be sportive as the lawn?

Questions:

Of mute insensible things, 
And here the silence, and the calm, 
And here shall be the breathing balm, 
Of up the mountain springs.
I. Use the following to sentence of your own:

(a) The English is spoken by English.
(b) Neither of them two boys are going to pass.
(c) She is my cousin sister.
(d) One should do his duty.

II. Correct the following sentences:

(a) Happiness consists happiness.
(b) He is indebted to his friends for their help.
(c) I studied Oxford.

III. Fill in the blanks with appropriate prepositions:

(a) Value of Sports.
(b) Internet - A Modern Day Asset.
(c) Women Empowerment.
(d) Pleasures of Reading.
(e) Terrorism.

IV. Read the passage and answer the questions that follow:

OR

(For Non-Hindi speaking/Foreign students)
1. Explain the following:

**Compulsory Question**

Labelled diagrams where they are necessary.
Select two questions from each unit. Draw neat and well.
**Note:** Attempt the questions in all. Question No. 1 is compulsory.

Maxmum Marks: 40

Time: Three Hours
UNIT I

7. Explain the following:

(a) Sporangium structure in Phycomycetum.

(b) Asexual reproduction in Phytophthora.

UNIT II

8. Ecocagrams showing sexual and asexual reproduction.

5. Give the diagrammatic representation of life-cycle of

(a) Uredinial and aceridal stages of Puccinia

(b) Uredinial and aceridal stages of Puccinia

9. Explain the following:

(a) Crustose lichen and Polysiph lichen

(b) Uredinial and aceridal stages of Puccinia

(c) Crustose lichen and Polysiph lichen

(d) Uredinial and aceridal stages of Puccinia

8. Describe Asexual reproduction in Volvox with suitable

diagrams.

9. Describe Asexual reproduction in Volvox with suitable

diagrams.

3. Helicocyst

(c) Role of Bacteria in Industry.

4. Helicocyst

(b) Role of Bacteria in Industry.

2. Write short notes on the following:

(a) Crustose lichen and Polysiph lichen

(b) Uredinial and aceridal stages of Puccinia

(c) Crustose lichen and Polysiph lichen

(d) Uredinial and aceridal stages of Puccinia

8. Describe Asexual reproduction in Volvox with suitable

diagrams.

9. Describe Asexual reproduction in Volvox with suitable

diagrams.
1. (a) Name the disc-like structure present on the outside of cell membrane.

(b) What is Tandem duplication?

(c) What is Synaptonemal complex?

(d) Which structure forms the spindle fibres in the plant cell?

(e) Which scientist who actually observed lysosomes?

(f) Name an aneuploid having one additional isoformosome.

(g) What are Tandem proteins?

(h) What is Christmas?

Compulsory Question

Labelled diagrams where necessary.

All questions carry equal marks. Draw neat and well.

Note: Attempt all questions in all Question No. I is compulsory.

Maximum Marks : 40

Time : Three Hours

Paper - II
(Cell Biology)

BOTANY

CSE/D-17

802

Roll No. ..........................................

Total Pages : 3
UNIT-1

1. Define Pleurisy. Describe its structure.

2. (a) Define Plasma membrane. Describe its structure.

3. (a) Defne mitochondria. Explain the ultra-structure and functions of mitochondria.

4. (b) Describe the structure of Nucleolus.

5. Explain the structure and functions of the following:


7. Describe the process of mitosis in plant.

8. (a) Polyene chromosomes.

9. (b) Explain with suitable examples.

8. What are translocations? Explain with suitable examples.

9. Give a brief account of sex determination in plants.

UNIT-2

8. Why is Cell Cycle? Describe the process of mitosis in plant.

7. Explain with suitable labeled diagrams.

6. Write short notes on the following:

5. Describe the structure of Nucleolus.

4. Write a short note on Golgi apparatus.

3. With the help of suitable diagrams explain the ultra-structure and functions of Mitochondria.

2. (a) Define Plasma membrane. Describe its structure.

8. (a) Polyene chromosomes.
I. Write short notes on:

Compulsory Question

from section B.

Attempt two questions from sections A and two questions.

Note: Attempt six questions in all. Question No. 1 is compulsory.

Time: Three Hours

Maximum Marks: 40

Paper: I

Cell Biology-I

Life and Diversity from Prokarya to Protozoa and

ZOOLOGY

GS/E/D-17

803

Total Pages: 3
SECTION A

1. Write in detail on the modification of the plasma membrane.

2. Explain various modifications of endoplasmic reticulum.

3. Discuss polymorphism in Trypanosoma.

4. Prarsite Plasmodium.

5. Explain in detail the etiological schizogony of malaria.

SECTION B

6. Discuss the ultrastmicroscopic morphology.

7. Describe the different views regarding the biogenesis of mitochondria.

8. List of function of lysosomes.

9. (a) Prarsite Plasmodium.

1. Answer the following questions in not more than 20 words:

Compulsory Question

Well labelled diagrams also.
Select one question each from Section A and B. Draw
Note: Attempt five questions in all. Q. No. 1 is compulsory.
Maximum Marks: 40

Time: Three Hours

Paper-II
(Zoology)

Life and Diversity From Coelenterata to Helminths

Roll No. .................
Total Pages: 3
SECTION-B

4. Briefly write about the digestive system of Fasciola hepatica.

5. Describe the phenomenon of delayed action in connection with Fasciola hepatica.

6. Write about the defensive system of Fasciola hepatica.

7. Describe the history, mode of infection and pathogenicity of Fasciola hepatica.

8. Describe the different types of B-lymphocytes and T-lymphocytes. (b) Distinguish between active and passive immunity.

9. Describe the different types of B-lymphocytes and T-lymphocytes.

8. (a) Write about the different types of cancer. (b) Explain the various methods.

Write down the differences between Rana and Xenopus.

Explain the process of synapsis and crossing over.

Draw well labeled diagram of eukaryotic nucleus.

Explain the structure and functions of nucleosome.

SECTION-A

2. Describe the structure of the Media of Otago.

3. Give the general characters of phylum Coelenterata.

4. Describe the structure and function of stalks.

3. Describe the structure of the stalks of the Media of Otago.

3%
and Zener Breakdown.

Give a comparative study between Avalanche Breakdown

(ii) Space Charge Capacitor and Diffusion Capacitor

(iii) Drain and Diffusion Current

2. (a) Define and explain the following:

UNIT-I

Why CE configuration is preferred over other
Why PNP region is kept thin and very lightly doped?
Discuss the disadvantages of Center Tapped PWR.
Across P-N junction under Forward Bias condition.
Justify the statement that "Majority Carrier Diffuses

Compulsory Question

Each unit question No. 1 is compulsory.
Note: Attempt five questions in all, selecting one question from

Maximum Marks: 40
Time: Three Hours

Paper-I (Theory)
(Electronic Devices and Circuits-I)

ELECTRONICS

GSE/D-17

807

Total Pages: 3
UNIT-III

4. (a) Discuss the working of a Bridge PWR circuit in detail.

5. (a) Design a voltage doubler circuit and explain its working.

(b) Define and derive an expression for RMS value of output in a Bridge PWR circuit.

UNIT-II

4. (a) Draw circuit diagram of emitter follower and explain its working.

(b) Define and derive an expression for negative reference level series clipping circuit in detail.

5. (a) Discuss the working of a static line regulation and load regulation.

(b) Define and explain an expression for voltage gain of transistor.

4. (a) Obtain h-model of transistor in CE configuration.

(b) Draw circuit diagram of emitter follower and explain its working.

3. (a) Obtain h-model of transistor in CE configuration using h-model of transistor.

(b) Derive an expression for voltage gain with source and explain its working.

9. (a) State and explain Millers Theorem.

7. (a) What do you mean by „Transistor as an Amplifier”.

4. (a) Discuss the Input Static characteristics curves of CE configuration.

(b) Discuss in detail.
2. (a) Find P, Q and R in the following:

UNIT-I

(2x4=8)

Why TTL gates are not used in industrial environment?

(c) Define and explain Propagation delay.

(b) Why NAND logic gate is called Universal Logic Gate?

Number System

I. (a) Explain how negative numbers are represented in binary.

Compulsory Question

Select one question from each unit.

Note: Attempt all questions in all Question No. 1 is compulsory.

Maximum Marks: 40

Time: Three Hours

Paper-II (Theory)

Digital Electronics-I

ELECTRONICS

808

GSE/D-17

Roll No. 3
UNIT-III

(2+x=4)

\[ Z + Z \cdot X + X = X \cdot Z + Z \cdot X + X \cdot X \]

(i)

\[ Z \cdot X = Z \cdot X + Z \cdot X + X \cdot X \]

(ii)

Prove the following identities:

(a) Define and discuss XOR and NAND gates.

(4)

(b) Define and discuss the operation of RTL NOR gates.

(4)

(c) Discuss the operation of RTL NAND gates.

(4)

(d) Explain the working of MOS NAND gate in detail.

(4)

(e) Discuss power dissipation in MOS NAND gate.

(4)

(f) Discus current-sink logic and power dissipation in TTL.

(4)

(g) Explain the operation of HIL NAND gate.

(4)

(h) Discuss Power Dissipation in MOS NAND gate.

(4)

(i) Explain the working of MOS NAND gate in detail.

(4)

(j) Discuss current-sink logic and power dissipation in TTL.

(4)

(k) Explain the operation of HIL NAND gate.

(4)

(l) Define and discuss distributive principle using suitable diagram.

(4)

(m) Define and explain distributive principle using suitable diagram.

(4)

(n) Simplify the following using K-map and implement using NOR gates only.

(4)

(o) Perform the following operations using 1's complement method.

(4)

(1) \( f(A, B, C, D) = \sum (0, 1, 2, 7, 8, 10, 11, 14, 15, 19, 20) \)

(4)
UNIT-I

8. What do you mean by sorting techniques? Explain Insertion Sort in detail.

UNIT-II

9. Define Computer Language and explain the generation of computer languages.

UNIT-III

(c) Multiprocessing
(b) Real Time
(a) Time Sharing

5. What do you mean by Operating System? Explain the characteristics of following Operating Systems:

7. Define Algorithm. What are the characteristics of an algorithm?

8. Write an algorithm to find HCF of given numbers.

UNIT-I

2. (a) Define Computer along with its components. What are the basic characteristics of computer system?

(b) Explain the application of computers in various fields.

UNIT-II

1. Define the terms:

(d) Ports
(c) Motherboard
(b) Flash Memory
(a) Transistors

UNIT-III

(c) Multiprocessing
(b) Real Time
(a) Time Sharing

5. What do you mean by Operating System? Explain the characteristics of following Operating Systems:


UNIT IV

3. Differentiate between:

(b) RAM vs. ROM
(a) Primary vs. Secondary Memory

4. (a) What is the purpose of sorting?
(b) Explain the types of software used in computer system.

Note: Attempt five questions in all by selecting one question from each unit. Question number is compulsory. All questions carry equal marks. Time: Three Hours

Maximum Marks: 40

Paper-1

(Computer and Programming Fundamentals)

COMPUTER SCIENCE

CSED-17

809

ROLL NO. ..........................

PAPER-1

TOTAL PAGES: 2
UNIT-I

(4×2=8)

What is a Window? Discuss its types with examples.

UNIT-II

(4×2=8)

What is a Window? Discuss its types with examples.

UNIT-III

(4×2=8)

What is a Window? Discuss its types with examples.

Note: Attempt the question in all the sections mentioned. Maximum Marks: 40

Paper-II

(CG/Software)

COMPUTER SCIENCE

811

Total Pages: 2

Roll No. 107

811/3,800/KD/107
2. Write the short note on the following:

UNIT I

(2x4=8)

Explain the terms: Recycle Bin, My Documents,
(c) What IS Static RAM.
(b) What is Voice Recognition Explain.
(a) Explain BCD and ASCII coding.

COMPULSORY QUESTION

From each unit All questions carry equal marks.

Note: Question NO. 1 is Compulsory. Attempt any four questions.

Maximum Marks: 40

Time: Three Hours

PAPER-I

Windows Operating System

Fundamentals of Computers and

COMPUTER APPLICATIONS

813

GSE/B.17

Total Pages: 3
UNIT IV

7. Magnetic Tape Storage Devices.
8. Compare Magnetic Disk and Memory. Explain various types of ROM available.

UNIT III

5. Explain the following:
   (a) Light Pen.
   (b) Scanner.
   (c) Bar Code Reader.
   (d) Pen Reader.
   (e) Displaying Table.

4. Explain in detail Inkjet and Laser printer.

UNIT II

3. (a) Convert following Decimal Number into Hexadecimal Number

2. (a) Convert following Decimal Number to Octal Number

1. (a) Convert following Hexadecimal Number into Decimal Number

9. (c) How do we change date and time in Windows operating system?
   (d) How do we install a printer in Windows operating system?

8. Explain the functions of an Operating System. Explain in detail.
UNIT-I

8

(f) IF function.
(e) Active Cell.
(d) Workbook.
(c) Author.
(b) Slide Transition.
(a) Slide.

I. Describe the following in short:

Computers Question

The students are asked to select one question from each unit.

Note: Question No. 1 is compulsory. In addition, attempt any

Time: Three Hours

Maximum Marks: 40

Paper-II

Office Automation Tools

Computer Applications

CSE/D-17

Roll No. ..........................................

Total Pages: 3
UNIT-IV

(4x2=8)

Count

Max.

Write steps to apply following in MS-Excel:

7. Write steps to apply following in MS-Excel:

(3+3+3=8)

(a) Copying data.

(b) Finding and Replacing data.

(c) Freezing cells.

(d) Write steps for each of these.

(e) Rotating text in a cell.

(f) Changing cell width.

(g) Inserting a worksheet in a workbook.

6. Briefly describe the following features of MS-Excel:

(a) Inserting a worksheet in a workbook.

(f) Inserting a worksheet in a workbook.

(b) Inserting a worksheet in a workbook.

(e) Rotating text in a cell.

(d) Changing cell width.

(c) Write steps for each of these.

(b) Rotating text in a cell.

(a) Copying data.

UNIT-III

(4x2=8)

Briefly describe various options available with in:

(a) Write steps to apply Spellcheck feature in MS-Word.

(b) Write steps to apply Spellcheck feature in MS-Word.

(c) Write steps to apply Spellcheck feature in MS-Word.

(d) Write steps to apply Spellcheck feature in MS-Word.

(e) Write steps to apply Spellcheck feature in MS-Word.

(f) Write steps to apply Spellcheck feature in MS-Word.

(g) Write steps to apply Spellcheck feature in MS-Word.

(h) Write steps to apply Spellcheck feature in MS-Word.

UNIT-II

(4x2=8)

Briefly discuss the following features in MS-Word:

(a) Write steps to apply Spellcheck feature in MS-Word.

(b) Write steps to apply Spellcheck feature in MS-Word.

(c) Write steps to apply Spellcheck feature in MS-Word.

(d) Write steps to apply Spellcheck feature in MS-Word.

(e) Write steps to apply Spellcheck feature in MS-Word.

(f) Write steps to apply Spellcheck feature in MS-Word.

(g) Write steps to apply Spellcheck feature in MS-Word.

(h) Write steps to apply Spellcheck feature in MS-Word.

UNIT-I

(4x2=8)

What do you mean by Macros in Excel? Write steps to

run a macro.

9. (a) Briefly describe any two types of charts in Excel.

(b) Briefly describe any two types of charts in Excel.

(c) Briefly describe any two types of charts in Excel.

(d) Briefly describe any two types of charts in Excel.

(e) Briefly describe any two types of charts in Excel.

(f) Briefly describe any two types of charts in Excel.

(g) Briefly describe any two types of charts in Excel.

(h) Briefly describe any two types of charts in Excel.

UNIT-IV

(4x2=8)

Count

Max.

Write steps to apply following in MS-Excel:

7. Write steps to apply following in MS-Excel:

(3+3+3=8)

(a) Copying data.

(b) Finding and Replacing data.

(c) Freezing cells.

(d) Write steps for each of these.

(e) Rotating text in a cell.

(f) Changing cell width.

(g) Inserting a worksheet in a workbook.

6. Briefly describe the following features of MS-Excel:

(a) Inserting a worksheet in a workbook.

(f) Inserting a worksheet in a workbook.

(b) Inserting a worksheet in a workbook.

(e) Rotating text in a cell.

(d) Changing cell width.

(c) Write steps for each of these.

(b) Rotating text in a cell.

(a) Copying data.

UNIT-III

(4x2=8)

Briefly describe various options available with in:

(a) Write steps to apply Spellcheck feature in MS-Word.

(b) Write steps to apply Spellcheck feature in MS-Word.

(c) Write steps to apply Spellcheck feature in MS-Word.

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(f) Write steps to apply Spellcheck feature in MS-Word.

(g) Write steps to apply Spellcheck feature in MS-Word.

(h) Write steps to apply Spellcheck feature in MS-Word.

UNIT-II

(4x2=8)

Briefly discuss the following features in MS-Word:

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(c) Write steps to apply Spellcheck feature in MS-Word.

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(h) Write steps to apply Spellcheck feature in MS-Word.

UNIT-I

(4x2=8)

What do you mean by Macros in Excel? Write steps to

run a macro.

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(f) Briefly describe any two types of charts in Excel.

(g) Briefly describe any two types of charts in Excel.

(h) Briefly describe any two types of charts in Excel.
UNIT I

1. Write short notes on the following:

Dna, DNA. Discuss the different steps used in production of recombinant DNA technology.

2. What are the monoclonal bodies? How are they produced?

3. What do you mean by recombinant DNA technology?

4. Describe briefly:

(a) Embryo transfer technology.

(b) Application of plant tissue culture.

5. Discuss the applications of biotechnology in agriculture and medicine.

6. What is bioremediation? How it can be used to reduce soil and water pollution?

7. What is an intellectual property? What rights are available to protect it?

UNIT II

(d) Patents.

(c) COD and BOD.

(e) Phytoremediation.

(f) Immobilized enzymes.

Note: Attempt Q. No. 1 and four others selecting two questions

Time: Three Hours

Question Paper I

Introduction to Biotechnology

BIO TECHNOLOGY

CASE STUDY 1

ROLL NO. 2

TOTAL PAGES: 2
1. Explain the following briefly:

Compulsory Question

Note: Attempt five questions in all. Question No. 1 is compulsory. Attempt two questions from each unit.

Maximum Marks: 40

Time: Three Hours

Paper-II

(Biochemistry-1)

BIOTECHNOLOGY
UNIT-I

2. Define Polyunsaturated. Describe the structure and functions of any two polyunsaturated.

(a) Define Polyunsaturated. Describe the structure and functions of any two polyunsaturated.

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(a) Define Polyun...
I. Define and explain any terms of the following:

(Refer to page)

Complementary Question

Questions carry equal marks

Note: (a) No. J is compulsory. Attempt five questions in all.

Maximum Marks: 40

Time: Three Hours

Paper: 102

HYGIENE & PROMOTIVE HEALTH

GE/D-17

1169

Roll No. 04

Total Pages: 04
2. Describe in detail mode of spread, symptoms, prevention and meanin of polo.

3. Discuss mode of spread, symptoms, prevention and meanin of dengue spread by insect bite.

4. How is the disease virus caused, spread, prevented and meanin of chikara.

5. Write cause, symptoms, mode of spread, prevention and meanin of chikara.

1. Write short notes on the following:

(a) Knitting
(b) Twist
(c) Texile
(d) Fiver
(e) Liere

2×4=8

Comprehensive Question

Note: Attempt five questions in all. Selecting two questions from each unit as well as comprehensive question.
7. Explain plain weave and its types.

8. What do you mean by yarn? Explain different types of yarn.

Unit III

9. Write short notes on the following:
   (a) Knitting
   (b) Felting
   (c) Bonding

8. Discuss knitting technology in detail.

3. Discuss the manufacturing process of wool.

8. Explain the characteristics of any one natural plant fiber.
1. Discuss the importance of study of Human Development.

2. Write short notes on the following:

   a. How study of Human Development is helpful to parents and teachers?

   b. List the stages of life span with age.

Course 106
DEVELOPMENT
INTRODUCTION TO HUMAN

GSE/D-17

Roll No. 03
Total Pages: 03
Compositional Question

9. Discuss the principles of development and write in detail what is the difference between growth and development.

8. List the principles of development and write in detail about any two.

6. Write an essay on puberty spur.

5. Write short notes on the following:

Unit II

4. Discuss the historical trends in the field of Human Development with special reference to the medieval viewpoint.

3. Write an essay on puberty spur.

2. What is the difference between growth and development?

1. Explore with examples.

Note: The text contains various fragmented sentences and appears to be a mix of random characters and symbols, making it difficult to extract meaningful content. The document seems to be a page from a textbook or a study material, but due to the quality of the image, it is challenging to accurately transcribe the text.
P.10.

II.

Also write down the characteristics of a Computer.

4. Define Computer.

Unit I

Examples.

2. Define output devices with the help of suitable

2. What do you mean by Computer Program?

2. Define Language Translation.

2. What is Machine Code?

2. Define Computer Virus.

2. Define Software.

2. What is the purpose of ROM?

2. When do you mean by CPU?

I. compulsory question

Question from each unit 0. No. 1 is compulsory.

Note: Attempt five questions in all, selecting at least one

Time: Three Hours

Maximum Marks: 80

II. Fundamentals

Computer & Programming

BCA/D-17

Role No. 02 Page: 02
Unit I

1. Write down the characteristics of a good programming language.

9. On which type of these Binary Search Algorithm is applicable?

10. On which type of these Binary Search Algorithm is applicable?

8. What do you mean by Searching?

Unit II

1. Class of 60 students in the subject of Computer Science. Write an algorithm to find the average marks of a student.

10. Discuss the concept of Program Design in detail.

Unit III

1. Explain any three input devices.

5. Define Input devices.

4. Discuss the functions of an Operating System.

12. Define an operating system.

Unit IV

12. Explain Memory Hierarchy.

4. What do you mean by Memory ?
the relationship between the various parts of the system to facilitate understanding.

At the heart of the system is the relationship between the various parts, which must be understood to comprehend the whole. This relationship is complex and requires careful analysis to ensure that all components are aligned correctly.

In summary, the system must be designed with a clear understanding of the relationship between its parts. This will ensure that the system functions as intended and meets the needs of the user.

References


Section 3

1. Find the value of \( n \):

2. A, B, and C given in section 1. Find the differential equation:

3. Solve the differential equation:

4. Solve the differential equation:

Mathematical Foundation

BCA-136

MATHEMATICS

BCA/D.A.T

Total Pages: 96
always in the same year.

When the number of words in a text is divided by 2 and 3, there are more ways in which it can be done than if 5 is to be rounded such that it remains the same.

From now on, nouns are given in a class. A common

In which R is the quadrature relation on a set. A

The many appeared in Hindi, which

show:

in both subjects. Like set operation

has 200 of whom 30 appeared in English, and 60

have a certain level of candidates, all of whom English

Section 1

Section 1
What made Foreman think of opening a tobacconery?

9. (a) Why did Gregory return to live another life?

Brine out the elements of humour in the play, Hamlet.

What is the role of the teacher in the Gandhian scheme?

marks

question from each unit. All questions carry equal
Note: Attempt five questions in all selecting at least one
Maximum Marks: 80

BCA 115

COMMUNICATIVE ENGLISH

BCA/D-17

ROLL NO. .......................................................... 06

---

1. What is the Procedure to seek information under RTI?

2. Giving a bank ATM card issued

3. Giving Guest at a Wedding Party

4. Facing an interview for a job

5. Develop one dialogue-based paragraph of about 200 words

Against the irregular delivery of letters.

Write a letter to the Postmaster of your town complaining

---
UNIT II

Lesson 1

1. Help the doctor find the right tool for each task.
2. Try to solve the puzzle of the farmer.
3. What did the farmer say when he found the right tool?
4. Write the story and its writer.

Questions:

1. What did the farmer say?
2. Why was the farmer upset?
3. When did the farmer do it?
4. Name the story and its writer.

UNIT III

Lesson 2

1. Your older brother is a nurse officer.
2. Happiness is an inner state of mind.
3. The player becomes very well.
4. Inner. suitability applies in the blank spaces.
5. Arrhenius process sentence does direct.
6. Procedure for sending a text message.
7. Advantages of e-mail.
8. Write in the spaces.

Questions:

1. Why could he not bear?
2. When was the cause of his disappointment?
3. Why was he upset?
4. What did the farmer do?
5. Name the story and its writer.

UNIT IV

Lesson 3

1. Read the passage given below and answer the questions.
2. Where is the paragraph headed in his pockets.
3. Avoiding the other players, Rani walked slowly.
4. Read the passage given below and answer the questions.

Questions:

1. Why were Jacob and William ready to do anything?
2. Where did Macintosh advise Roy to do in the court?
3. How did the little boys feel old Dogo when he
4. How did Rani lose the message ball?
5. Can anyone depend on it?
6. Why does the exercise of the spirit according to

Questions:

1. Why does the average man take everything for
2. Educational institutions?
3. What does Nareen say about admissions in our
4. How does man hear the animal?
7. Write an application to the Principal of an Engineering College for the post of a Computer Instructor. Give full details of your academic and professional qualifications.

5.

Which of the following topics can be the most exciting day of your life?

(a) Work in Workshop
(b) A visit to an International Trade Fair
(c) Role of computers in modern life
(d) Complete detail of your academic and professional qualifications
(e) Sunny weather

6.

Write a paragraph of about 150 words on any one of the topics given in the brackets below:

(a) The garden is watering the plants
(b) The postman delivered him a parcel
(c) My teacher helps me in my studies
(d) I put my grocery bag on the table
(e) I change the voice

4.

(iv) They changed the voice. He cannot hear anyone speaking the
(v) They changed the voice. Can I hear anyone speaking the
(vi) There was a bright hope of his coming
(vii) A new car cost a lot of money
(viii) I can solve this difficult sum
(ix) I put a humorous play on
(x) I prefer to listen to songs at others' houses.

3.

(i) Money gets up at five o'clock every morning.
(ii) Those who live in glass houses should not throw stones at others.
(iii) Those who live in glass houses should not throw stones at others.
(iv) I prefer to listen to songs at others' houses.
(v) I prefer to listen to songs at others' houses.

2.

(iv) I prefer to listen to songs at others' houses.
(v) I prefer to listen to songs at others' houses.
(vi) I prefer to listen to songs at others' houses.
(vii) I prefer to listen to songs at others' houses.
(viii) I prefer to listen to songs at others' houses.
1. Explain the following with example:

- (a) Excise
- (b) Auto
- (c) Continue is used for
- (d) Reiteration is
- (e) Switch is used for
- (f) IF-ELSE is used for
- (g) printf() is used for
- (h) C is an

2. Fill in the blanks:

   Fill in the blanks:

3. Example:

   Write a function in C with example.

4. Explain various data types available in C.

5. Explain various loop constructs in C language.

6. Explain the difference between while and do-while loop.

7. What is a function in C? Explain with examples.

8. What are the various loop constructs in C language?

9. What is an array in C? Explain its various types with example.

10. Explain various storage classes available in C.

11. What is the concept of scope class in C language?
1. Discuss the significance of communication.

2. Discuss in brief objectives of communication.

3. She said to me: "Who teaches you English?"
4. She said to me: "I saw a stranger in the street."

Change the narration of the following sentences:
5. Write a short note on Camera.
6. Who is Group Discussion?
7. Define Telephone.
8. What do we mean by Communication?

1. Answer the following questions:

**Note:** Attempt all questions.

Maximum Marks: 30

Time: Three Hours

BSET-101
Communication Skills

BSET/D-17

Roll No. 

Total Pages: 03
mis-understandings at a minimum.

mis-understandings while keeping costs, time consuming
and ensuring activity and will prompt further
person you are communicating with then you are
personal and even your pose, this shows

personal and resonant with another in doing this you

emphasising certain behaviors that fit within your

other person more comfortable with you by speaking

This doesn't mean you have to be chairman, chairman,
can adapt more readily to their styles of communicating,

communicating win 60 a much way towards helping you

communicating skills require a high level of self-

liche:

5. Make a précis of the following passage and give a suitable

3x4/5=1 1/4

3 x 4/5 = 1 1/4

She has given me a message.
She kept us waiting.
This polite communications.

Change the voice of the following:

He knew that I (pass) (start)

He knew that I

No sooner did I reach the station than he

He rode (not come)

Fill in the blanks with correct form of verb given

4. (a) Arise is (b) Dear Sir/ Madam of our college:
Life is not (c) bed of roses.

Sixty minutes make your

Fill in the blanks with appropriate articles:

(a) Time (b) Circuits
Television (c)

Minutes of meeting:

Write a short note on any two:

Write a short note on Paper

Write a detailed note on e-mail.
and show symmetric matrix

\[
\begin{bmatrix}
5 & 6 \\
6 & 8 \\
5 & 1
\end{bmatrix}
\]

Exercise 1

(a) Express \( V = 0 \) as a sum of symmetric

(b) Hence find rank of \( V \).

\[
\begin{bmatrix}
0 & 2 & 2 \\
2 & 2 & 1 \\
1 & 2 & 1
\end{bmatrix}
\]

Also reduce the matrix.

(c)

from each line. Note that the solutions are consistent.

(d)

Discuss the relevance of the selected axes.

(e) Discuss the relevance of the selected axes.

(f) Discuss the relevance of the selected axes.

SELECTIVELY

OPTIMIZATION TECHNOLOGY

MATHEMATICAL FOUNDATION FOR

12:15

8/17-17

REMARKS

TOTAL PAGES: 0
4. Define a partition of a set. Find partitions of the set:

\[ \{1, 2, 3\} \]

5. Find the inverse of the function:

\[ f(x) = x + 2 \]

6. If \( R \) is reflexive, \( R \) and \( R \) are the same relation. Show that if \( R \) is defined by:

\[ aRb \]
2. (a) State Gauss's divergence theorem. Show that electric field can be expressed as negative of the gradient of the electric potential.

3. Explain the concept of displacement current.

4. Explain why radio horizon is at a greater distance when frequencies of 300 kHz.

5. Determine the length of an antenna operating at a frequency and show theorem.

6. What is the difference between Gauss's divergence theorem and Stokes' theorem.

7. Give the meaning and unit of Poynting vector.

Compulsory Question

Answers may be marked.

Note: Attempt five questions in all sections at least one.

Maximum Marks: 40

Time: Three Hours

BIST-103

PHYSICS-I (EM THEORY)

BIST/D-17

Roll No. 03

Total Pages: 03
Unit II

1. Explain the concept of scalar and vector potentials.

4. What are the Maxwell's equations in their differential form and give their physical significance?

3. (a) 
4. (b) 
5. Determine the height of receiving antenna to obtain a maximum transmission distance of 48.7 km from the transmission antenna of height 40 m.

6. (c) 
Determine the height of receiving antenna to obtain a maximum transmission distance of 48.7 km from the transmission antenna of height 40 m.

Unit III

2. a. Determine the characteristic impedance of a transmission line having a characteristic impedance of a transmission line having L = 0.018 H/ft. and C = 21 pf. Show that both E and H are perpendicular to each other and in the direction of propagation of wave.

6. (a) 
Determine the equation of plane electromagnetic wave in vacuum and for a dielectric medium.

5. In vacuum and for a dielectric medium.

2. When the relation for speed of electromagnetic waves importance.

4. (a) 
What are gauge transformations? Discuss the Coulomb gauge and Lorentz gauge with their

8. (a) 
What are different types of transmission lines?

6. Discuss the various types of losses occurring in a transmission line.

8. (a) 
Discuss the resonant and non-resonant antennas.

9. (a) 
Discuss the field strength at a distance of 1 foot in a horizontal plane through a horizontal dipole of 30 m length, 1 A current at 50 Hz frequency of 3 MHz power alone with their radiation pattern.

2. (a) 
Determine the characteristic impedance of a transmission line having L = 0.018 H/ft. and C = 21 pf. Show that both E and H are perpendicular to each other and in the direction of propagation of wave.
Perform the following binary addition:

\[
\begin{align*}
9 (Z) &= 1011 \quad 11011011 + 11011011 \\
8(x) &= 1011 \quad 11011011 + 11011011 \\
7(x) &= 0111 \quad 11011011 + 11011011 \\
\end{align*}
\]

2. (a) Convert the following:

\[
\begin{align*}
111111_2 &= 16 \quad \text{Decimal} \\
1010101010_2 &= 214 \quad \text{Decimal} \\
11111111_2 &= 255 \quad \text{Decimal} \\
\end{align*}
\]

2. (b) Discuss the application of flip-flop.

2. (c) Primary codes.

2. (d) When is a gray code? Discuss its advantages over

2. (e) Explain radix of a number system.

2. (f) How a T-flip-flop can be used as a divide-by-two

Mark: Three Hours

Maximum Marks: 40

B.E./B.Tech. (IT))

Electronics-I

B.E./B.Tech. (IT))

Electronics-I

B.E./B.Tech. (IT))

Electronics-I

B.E./B.Tech. (IT))

Electronics-I

B.E./B.Tech. (IT))

Electronics-I
(a) \[ f(A, B, C, D) = \overline{A \cdot \overline{B} \cdot C \cdot D} \]

(b) \[ f(A, B, C, D) = \overline{A + B + \overline{C} + D} \]

(c) \[ f(A, B, C, D) = \overline{A + \overline{B} + C + \overline{D}} \]

(d) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(e) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(f) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(g) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(h) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(i) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(j) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(k) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(l) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(m) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(n) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(o) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(p) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(q) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(r) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(s) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(t) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(u) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(v) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(w) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(x) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(y) \[ f(A, B, C, D) = \overline{A + B + C + D} \]

(z) \[ f(A, B, C, D) = \overline{A + B + C + D} \]
AM Wave

The frequency band within and beyond spectrum of

Determine an expression to determine side band

When is modulation to become amplitude modulation

2. \textit{Compulsory Question}

\textit{Note: Attempt five questions in all, selecting one question from each Unit. No. 1 is compulsory. All questions carry equal marks.}

Maximum Marks : 40

Time : Three Hours

Paper I (BSTT-103)

Electronics Communication

B.S.T.T.-17

12128

ROLL No. 03

TOTAL PAGES : 03
Unit I

1. What is Digital Communication system? Where is Echo-cancelers device & Why is it use in transmission line? How does it influence the digital communication system? Discuss the band with requirements in detail. Describe the characteristics of digital communication system. Give different types of digital communication system.

2. What is Power of sound? How do we minimize it?

3. Write short notes on the following:
   (a) Quantization of signals.

Unit II

4. Describe Sample-theorem for Band-Pass signals.
   (b) Of Pulse Amplitude Modulation (PAM) in detail.

5. What is Pulse Modulation? Describe different types of modulation.
   (c) The frequency of signal is reduced to 400 Hz. Deviation of AF voltage is increased to 8 V while the deviation of AF voltage is 4 V. Calculate the Frequency HZ & the audio modulation voltage is 4 V. Calculate the new waveform sketch.

6. What is Delta-Modulation? Draw the block diagram of PAM transmitter and receiver.

7. Explain the working of the other forms of pulse-modulation (PCM). Explain why PCM is more noise-resistant.
4. (c) Write a note on Magnetic disk.

Unit II

8. While a note on fourth generation computers.
8. While a note on Supercomputers.

3. Write a note on third generation computers.
8. Write a note on third generation computers.
8. Discuss the characteristics of computer hardware and software.
8. Define hardware and software.
8. Name four hardware and four software.

Note: Attempt five questions in all, selecting one question from each unit. Q. No. 1 is compulsory.

Time: Three Hours

Maximum Marks: 40

COMPUTER FUNDAMENTALS

31/10 12129

ROLL NO. 07
Then in the breath that from my mistress' cheeks,
And in some perfumes is there more delicious,
But no such roses see I in her cheeks,
I have seen roses damask'd, red and white,
The breath goes now, and some say, no,
Whils't some of their sad friends do say,
And whisper to their souls, to go,
As violets men pass mildly away,
To me, that feel the like, thy state desaires,
I read it in thy looks; thy languish'd grace
Can judge of love, thou feel'st a lover's case;
Sure, if that long with love acquaintance eyes
Given below:
1. Explain with reference to the context any line of the passage

SECTION-A

Any two questions from Section-B.
No. 5(a) and Question No. 5(b) are compulsory. Attempt
Note: Attempt three questions in all. Question No. 1, Question
Maximum Marks : 80
Time: Three Hours

Paper II
LITERATURE IN ENGLISH (1550-1660)

16502
BSE/D-17

Roll No. ........................................…… Total Pages : 3
Write a short essay on any two of the authors given below:

1. Sir Thomas Browne - Religio Medici
2. Robert Burton - The Anatomy of Melancholy
3. Nutton and Sackville - Cordobuce
4. Shakespeare - Othello
5. Given below:

Write a note in about 400 words on any two of the authors.

SECTION-C

Read the following excerpts from the poems that you have studied in your syllabus. What is meant by metaphysical poetry? Illustrate Donnes's sonnet with particular reference to the themes of friendship and love.

The theme of friendship finds a mature expression in Sir Philip Sidney's sonnet "A Sonnet with Reference to his Son.

Note: Attempt any two questions from this section.

SECTION-B

Love so alike, that none do slacken, none can die.

If our two loves be one, or thou and I,

Whatever dies, was not mixed equally.

Without sharp north, Without declinating west,

Where can we find two better hemispheres.

And true plain hearts do in the face rejoin.

My face in thine eye, thine in mine appears.
(1) (1×16=16)

(2) (1×16=16)

(3) (2×8=16)

(4)
Explain two powers of Vice-President of India.

What do you mean by joint electorate system?

What do you mean by fundamental duties?

Give the name of two persons who enacted the Constitution.

What was the main function of Constituent Assembly?

Complimentary Question

Note: Attempt all the questions in all the Sections.

Maximum Marks : 80

Time : Three Hours

Paper (I)

(i) (a) 3

Paper (II)

Indian Constitution

POLITICAL SCIENCE

BSE/D-17

Total Pages : 3
UNIT I (Essay-1)

2. Explain the preamble of Indian Constitution.


7. Critically examine the amendment procedure of Indian Constitution.

8. Explain the composition and powers of High Court.

9. Write the provisions for proceeding the independence of judiciary in Indian Constitution.

5. Explain the appointment and powers of Governor of India.

4. Explain the appointment and powers of Prime Minister.

UNIT II (Essay-2)

2. Explain the meaning, aims and types of directive principles of state policy.

3. Explain fundamental rights.


7. Critically examine the amendment procedure of Indian Constitution.

8. Explain the composition and powers of High Court.

9. Write the provisions for proceeding the independence of judiciary in Indian Constitution.

5. Explain the appointment and powers of Governor of India.

4. Explain the appointment and powers of Prime Minister.

UNIT III (Essay-3)

2. Explain the preamble of Indian Constitution.


7. Critically examine the amendment procedure of Indian Constitution.

8. Explain the composition and powers of High Court.

9. Write the provisions for proceeding the independence of judiciary in Indian Constitution.

5. Explain the appointment and powers of Governor of India.

4. Explain the appointment and powers of Prime Minister.

8X2=16

(6) What are the two constitutional independent agencies?

(5) Why is decolonisation important?

(4) Write two causes responsible for the downfall of...
16
Discuss the social contract theory about the origin of state.

3. Define state, definition and its relation with other organization.

2. Discuss the relations between Political Science and History.

1. Discuss meaning, nature and scope of Political Science.

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

Maximum Marks: 80

Paper-II
Principles of Political Science
POLITICAL SCIENCE

BSED: 17
Total Pages: 6
5. Through the lens of the plurilateral approach of sovereignty.

6. What do you mean by welfare state? List features and criticism.

7. Which are the main organs of government? Discuss the function of any one.

8. Highlight the merits and demerits of pressure groups.

9. Objective type questions.

(c) All powers are powers of God, who said?

(i) God

(ii) Saint Paul

(iii) John

(iv) Bodin

(i) Chilvers

(ii) Pocock

(iii) Pollock

(iv) Bryce
16526/200/KD/1309

(1) Eight
(2) Six
(3) Four
(4) Two

Sovereignty

According to Garver, how many features are of

(1) Bodin
(2) Sir Henry Maine
(3) Hobbes
(4) Karl Marx

Who criticize the principle of sovereignty given by Austin?

(1)
(2)

(3)

(4)

I am the state is associated with:

(1) Class struggle
(2) Evolution
(3) Social contract
(4) Divine