Give meanings of any four of the following words:

(For Blind candidates only)

(iii) Bom

(ii) Round

(i) Achieve

(a) Beauty

(lv) Medicine

(III) Care

(II) Speech

(i) Worth

Give phonetic transcription of any four of the following words:

Note: Answer all questions.

Maximum Marks: 80

Time: Three Hours

1401

(General and Language—II)

ENGLISH

1401

GS/EM-18

Total Pages: 7

Roll No.
12
from the blind man?

(ix) Describe the life the dog led after being set free.

story make him one?

(viii) Is Gunda the hero of the story? If so, how does he

(vii) Where did Goudhan go?

not be lifted?

(vi) How did people reach when the Panchhitha could

the result?

(v) Where did the peasant do in the end and what was

Pawalpindi.

(iv) Describe the daily life of the old Sikh couple in

for the journey?

(iii) How do the people of the hill community prepare

(ii) Why did the photographer look very grave?

(i) Assess the equation between the old couple.

words each:

Give any six of the following questions in about 50

(vi) Why did the blind man loose?

(v) Why did Goudhan want to resign?

(iv) How much did the Panchhitha cost?

(viii) Where did the peasant plan to buy a bullcock from?

iv) Reference?

(vii) Why does the storm stand for in the story? The

(iii) Why was the journey so difficult?

(ii) Why did the narrator break into tears at the end?

(i) Who is Bhu?

phrase/sentence each:

(vi) Exceedly.

(v) Panchth.

(iv) Wotted.

(iii) Lively.

(ii) Soothy.

(i) Joyous.

Give antonyms and synonyms of any four of the

(vi) Vielled.

(v) Dampened.

(iv) Embarked on.

(iii) Terrace.
3. Answer any three of the following questions in 150-200 words each:

(a) What is the theme of the story, "Figrons at Daybreak"?

(b) Describe Tiunah's journey from her boarding school to her village.

(c) Write more about the event of umbrella. It was raining.

(d) Describe the excitement generated by the arrival of a Pencil-box in Mario Toll.

(e) Write on the element of humor in the story, "Belows".

(f) Displace elements—geographical, social, political, moral and spiritual.

(g) Would you consider "The Retriever" as a story about her village.

(h) What was your reaction, Tiunah's, during her journey from her boarding school to her village?

(i) My mother gave me an umbrella. It was raining.

(j) Write more about the event of umbrella. It was raining.

(k) Write more about the event of umbrella. It was raining.

(l) Write more about the event of umbrella. It was raining.

(m) Write more about the event of umbrella. It was raining.
(x) Water ............... all will not mix.

(ix) He is slow .......... he is confident.

Use proper conjunction:

(vii) He is a .......... soldier.

(vi) I love .......... plays.

Use proper adjective:

(v) He expressed his point of view in .............

(v) They managed to settle the dispute in .............

Use proper adverb:

(i) Could you get me .......... kilogram of tea, please.

(iii) Peacock is in danger of extinction.

(ii) His chiefs are happy .......... Mani’s work.

compounded.

(i) The bag is ............. the top rack ...

Use proper preposition:

(b) Do as directed (attempt any seven).

Handsome is their handsome does.

(c) A cultural festival you have organised in your college.

Your favourite author/writer.

An electronic gadget that you own.

Topics:

5. Write an essay in about 200 words on any one of the following:

20

Give him a drop of water

(xv) which dog is his and the old man will you

you should help the poor the teacher said

Pronounce the following sentences:

(xvi) Please help him.

(xvi) I know him.
1. [Question 1]

2. [Question 2]

3. [Question 3]

4. [Question 4]

5. [Question 5]

6. [Question 6]

7. [Question 7]

8. [Question 8]

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Total Pages: 4

Roll No.: 4

Time: Three Hours

Maximum Marks: 80
1. Explain the relationship between the government and the media in a democratic society.

2. Discuss the impact of social media on public opinion and political discourse.

3. Analyze the role of international organizations in promoting human rights.

4. Evaluate the effectiveness of anti-corruption measures in developing countries.

5. Discuss the challenges faced by women in the workforce in developing countries.

6. Analyze the impact of climate change on the agriculture sector.

Maximum Marks: 80

Time: Three Hours

PUNJABI (Elective)

CSE/M-18

1408

Total Pages: 8

Roll No. 10
1411/15, 000 KD/7, Map of India

(a) Madhvacharya
(b) Bhaskaracharya
(c) Ramanujacharya
(d) Shankaracharya

1. Who founded four Mahaas in the four corners of India?

2. Multiple choice question. Each question carries 2 marks. (20 marks)

Compulsory Question

[Detailed text not legible]

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

Maximum Marks: 80

Time: Three Hours

1411

Total Pages: 7

Roli No.
On the outline map of India, show the extent of Velay. 

Who of the following was a component of Chineze Language?

(a) Qutubuddin Khilji
(b) Mahrudd Chazanvi
(c) Muhammad Chazanvi

(c) Ilmenis

(d) Muhammad bin-Tughlaq

8. UNIT-1V (AL-AL)

9. What university was established by the rulers of Malwa.

(a) Ujjain University (b) Jabalpur University (c) Bhopal University (d) Patna University
(a) On which basis the theory is criticized?
(b) Explain the different kinds of Rent.
(c) Also use the diagrams.
(d) Determine the Rent of all Grades of land or Fanner.
(e) Who gave the theory of Economic Rent firstly? Define the meaning according to him.

Who gave the theory of Economic Rent firstly? Define the following questions:

1. A farmer with his A. Grade Land produces 35.5 animal wheat.

Compulsory Questions (Viva-voce)

Select one question each from any three of the four compulsory. Attempt the remaining three questions.

Note: Attempt five questions in all. Questions 1 and 2 are compulsory.

Maximum Marks: 80

Time: Three Hours

Paper-1

MICROECONOMICS-II

GE/M-18

ROLL NO. 7

Total Pages: 7
1. (a) All of the above. (b) Total Revenue. (c) Perfect Competition. (d) Round Robin. (e) None of the above. (f) Government by monopolistic price determination.

2. (a) Choose the correct answer: (i) None of the above. (ii) Long-run. (iii) Very Long-run. (iv) Very Short-run. (v) Short-run.

(e) Product differentiation was developed by ______.
(C) Define the following:

(a) \( MR \) > \( AR \)
(b) \( MR \) < \( AR \)
(c) \( MR \) = \( AR \)

(d) \( M F C \otimes M D C \) (MFC) = (MDC) (MCP) (Perfect Competition)

(E) Marginal Revenue Product (MRP).

(F) Marginal Product (MP).

(G) Average Product (AP).

(H) Total Product (TP).

Nature of the Following:

(a) Break-even point
(b) Profit
(c) Loss
(d) Zero Profit Point
(e) Minimum Average Cost
(f) MFC in Perfect Competition
(g) MR
(h) MC
(i) Horizontal Line

(B) Match the following:

(i) When is a firm in perfect competition?
(ii) Define non-price competition.
(iii) What is mean by market?
(iv) What is differential rent?
(v) Define the following:
10. Critically examine the classical theory of interest.

9. Differentiate between money and real wages. What are the factors affecting real wages?

8. Define an oligopoly. How is price and output determined under oligopoly?

7. What is monopolistic competition? Explain the price determination under monopolistic competition.

6. How price and output are determined under price discrimination? Explain.

5. Define monopoly. Discuss price and output determination under dumping.

4. What is perfect competition? Explain how price is determined under perfect competition.

3. What is perfect competition? Explain how price is determined under perfect competition.
1. Answer all the given parts.

Comprehensive Question (adjust as per)

Give the meaning of static cost.

Give the meaning of fixed preference.

What is mean by market price?

Define Guest error.

Define price discrimination?

Define break even point.

Define short run period.

What is perfect competition?

Compulsory Question (adjust as per)

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

Time: Three Hours

ECONOMICS

ECONOMICS

Total page: 3
5. Explain the demand/profit-maximizing theory of output.

UNIT-I (Chapter-I)

6. Define oligopoly. What are the features of oligopoly?

UNIT-III (Chapter-III)

7. When is the demand curve flat? How does it explain price

UNIT-II (Chapter-II)

8. What do you mean by monopoly? How are the price and

9. Explain the reasons of perfect competition and explain firms'
UNIT-I (30 marks)

1. Explain the scope of Health Education.

2. What are the general principles of First Aid?

UNIT-II (30 marks)

3. Discuss the sports policy of Haryana State.

UNIT-III (30 marks)

4. Explain the post-independence historical development of Physical Education in India.

Time: Three hours

Maximum Marks: 60

Note: Attempt the questions in all selecting one question from each Unit I, II, III, and IV. Unit IV is compulsory.
9. Answer the following:

Compulsory Question (10 marks)

UNIT-IV ( fizziere-IV)

1. Discuss the various types of synovial joints in detail. (10)

UNIT-I (fizzer-I)

2. Define the anatomy of Human bone. (10)

UNIT-III (fizzer-III)

5. What is the importance of Physical Fitness? (10)

6. Discuss the factors influencing Physical Fitness. (10)

10. Discuss the various types of joints in human body. (10)

(10x2=20)

(1) What are the components of Physical Fitness?
(2) What are the functions of bones in human body?
(3) Name any four common fractures.
(4) What is First Aid?
(5) Define Health Education.
UNIT-1 (গীতিকথা-১)

1. Write the notation of Rag Vindavani Sarang in Drut Khayal.

2. Write the detailed description of Rag Kaafi Or Hamir Rag.

3. Write down the notation Slow Khayal (Vilambit Khayal) in any Rag prescribed in your syllabus.

Note: Attempt five questions in all selecting at least one question from each unit. All questions carry equal marks.
UNIT-III (捔篋-III)

5. Write down the difference between Marji & Desh.
6. Write in detail. When do you know about "Gun and Dosh of Sinners?"

7. Write the prayer and Tivhara Till with dahan layakhees.

8. Write the story of Towards music: Oskamth Thakur used Abdul Kalam Khan.
10. Write the life-sketch and contribution of Pandit Omkarnath.
SECTION-I (20 M-
I)
7. Write in detail about Navak-Ravaki and Sam-Kal.


9. Write in detail about the Classification of Indian Musical Instruments. Write in detail.

10. Write down the notion of Tal Tapp, Tal and Tal Rupak.

SECTION III (नंतर-III)

What do you know about the Classification of Indian Classical Music.

8. Write down the contribution of media in the development of Indian classical music.

SECTION II (नंतर-II)

Define any two of the following:

(a) Vidyak Swar
(b) Meend
(c) Vaidil Swar
(d) Samvedal Swar

SECTION I (नंतर-I)

With Ekun and Duggan Layakares.

(4+4=8)
1. Define Indenting, and discuss the essentials of a good indention.

2. Discuss the procedure of the selection of office staff.

3. What is Supervision? Discuss the need for supervision in modern offices.

4. What do you mean by incentives? Illustrate your answer.

Marks: [Blank]

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

Time: Three Hours

Maximum Marks: 80

Office Management

1436 CSEM-I8

Roll No. Total Pages: 3

10. Draw up a routine to be followed in despatching outgoing mail.

8. Describe the working and merits of the following office appliances used in a business office:
(a) Typewriter
(b) Duplexing machine
(c) Wrapping machine
(d) Printer
(e) Computer

7. "In business full use is made of office machinery. Its purpose is not justified. Comment.

6. What essential points would you keep before you in order to reduce the cost of stationery and supplies?

When do you mean by centralisation of policies?

(a) Give two examples of centralisation in India.

(b) Give two reasons how does the reservation policies

Discussion

(c) Explain two features of secularism in Indian

(d) Explain the short problem of political delineation in India.

(e) Mention any two features of Indian Electoral System.

(f) What is meant by the autonomy of States?

(g) Why is India called a quasi-federal State?

5. Write short notes on the following:

(a) Compulsory Question

(b) Write 15 marks.

(c) Since Question No. 1 is compulsory, each question

(c) Note: Answer all the questions in all selecting one question from

Maximum marks: 50

Time: Three Hours

Class: 10
Paper: II

Indian Politics)

POLITICAL SCIENCE

GS/ESE-18

REH No. 445

Total Pages: 3
UNIT I

1. Explain the role of regional parties on Indian politics.

2. Explain in detail the main feaures of Indian Electoral System.

UNIT II

3. What is meant by state autonomy? What are the major reasons for the demand of state autonomy?

4. Why are you in favour of reservations? If yes, write down the constitutional provisions with regard to reservations. Give reasons in support of your answer.

UNIT III

5. Examine critically the role of Election Commission of India.

6. How political parties are registered in India? Discuss the main problems of political parties in India.

7. Explain the effects of regional parties on Indian politics.
3. Examine the composition and importance of the Election Commission in India.

2. Discuss the emerging trends of Indian Federalism.

1. Examine the causes of tension between Centre and State in Indian Political System.

Note: Attempt five questions in all. All questions carry equal marks.

Maximum Marks: 80

Time: Three Hours
(d) None of the above.
(e) Both (a) and (b).
(f) States Legislatures only
(g) Parliament only

9. Objective type questions.

(f) Telangana is going to become India’s

8. Discuss the factors influencing its

7. Discuss the role of Language in Indian Politics.

6. Discuss the merits and demerits of Pressure Groups.

5. Discuss the nature of Indian Political System.

4. What do you understand by Voting Behaviour in India?
Residency
(c)
Concurrent List
(c)
Share List
(b)
Union List
(a)

Which of the following is the subject of

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

Local Government
(b) (c) (d)

None of the above.

Local Government is the subject of

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

Commissioner

Chief Election Commissioner and Two Election Commissioners

Chief Election Commissioner only

Chief Election Commissioner only

Election Commission consists of

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

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

Who is the Ex-officio Chairman or Planning Commission?

(a) (b) (c) (d)
(8×2=16) Which was the first state formed on language basis?

(a) Himachal Pradesh
(b) Gujarat
(c) Andhra Pradesh
(d) Haryana

(86) Who is the author of 'Cast in Indian Politics'?

(a) Ralph Kohn
(b) T.L. Bhargava
(c) Jawaharlal Nehru
(d) Morris Jones

(vi) Political parties are registered by

(a) Governor
(b) Election Commission
(c) Supreme Court
(d) Parliament
UNIT-II (اعداد-2)

1. Describe the meaning, definition and utility of Political

2. What is the meaning of Behavioural Approach? Describe

3. Describe the meaning, definition and utility of Political

UNIT-I (اعداد-1)

Note: Attempt five questions, selecting one question from each unit. Question No. 9 is compulsory. All questions carry equal marks.

Total Marks: 80

Time: Three Hours

Contemporary Political Science

CSEM-18

Roll No. 

Total Pages: 7
Who wrote Modern Political Analysis?

(a) Hobbes
(b) David Easton
(c) Max Weber
(d) T. Lasswell
(e) F. M. McLaughlin

9. Select the correct answer:

(a) Politics is the study of influence and influential who

(b) Politics is the study of government

(c) Politics is the study of groups

(d) Politics is the study of power

(e) Politics is the study of laws

UNIT-I (5 Marks)

1. What is Consumer Protection? Describe the provisions made under the 2005 Act in detail.

2. Explain the Right to Information Act, 2005.

3. Write a detailed note on the significance of Political Socialization.

UNIT-III (5 Marks)

4. Define the term 'Political Theory'. Describe the main features of Political Theory.

5. What is Political Culture? Explain its kinds.

6. What is Political Education? Explain its importance.

7. Why is Consumer Protection Act, 2005 necessary?
(a) Religious

(b) Educational Institutions

(c) Family

(d) Who wrote the book, Politics?

(e) Which is the political culture of India?

(f) Which element is not related to the agency of political culture?

(1) Ideological Political Culture

(2) Subject Political Culture

(3) Professional Political Culture

(4) Civil Political Culture

(5) Societal

(6) Socrates

(7) Aristotle

(8) Plato
1. When the Right to Information Act came into force?

(a) In 2014
(b) In 2009
(c) In 2005
(d) In 2004

2. When the Protection of Consumer Act came into existence in India?

(a) 1996
(b) 1987
(c) 1998
(d) 1995
2. (a) Find the gcd of 28 and 49 and express it in the form

\[ 28m + 49n = \text{gcd}(28, 49) \]

(b) Show that every odd prime number is either of the form

\[ 4k + 1 \text{ or } 4k + 3 \]

SECTON-1

1. (c) Find \( a^m \) for \( m = 270 \).

(d) Split \( a + b \) into real and imaginary parts.

(e) Evaluate \( a + b \).

(f) If \( p \equiv q \pmod{m} \) and \( q \equiv r \pmod{m} \) then show that \( p \equiv r \pmod{m} \).

1. (a) If \( q \mid r \mid a \) then show that \( q \neq r \) and \( q \mid a \).

Compulsory Question

Compulsory: Select one question from each section.

**Note:** Attempt all questions in each section.

Maximum Marks: 27

Time: Three Hours

Paper: BN-121

NUMBER THEORY AND TRIGONOMETRY

1449

GS/AI-18

Roll No. 3

Total Pages: 3
Solve the equation.

\[ \tan^{-1} 2x + \tan^{-1} 3x = \frac{\pi}{2} \]

\[ \cos^2 \theta \sin^2 \theta = \frac{1}{2} \]

If \( \sin (\theta + n\pi) \) prove that of \( \theta \).

Express \( \sin \theta \cos \theta \) in a series of cosines of multiples of \( \theta \).

Find the cube roots of \( 8i \), expressing each in the form.

SECTION-III

Evaluate \( d(b-d)^2 \) where \( d \) and \( b \) are distinct primes.

Find the highest power of 6 contained in 500!

\( \mod (12) \)

Show that the set of integers \{1, 5, 7, 11\} of 1800 then are 1800.

Find the number of positive integers \( \leq 1800 \) that are

SECTION-II

Show that \( 510 - 310 \) is divisible by 11.

Solve the equation \( 7x + 5y = 3 \).
(e) What is the value of \( x^2 \frac{d^2 y}{dx^2} + \frac{dy}{dx} \)?

\[ y = \frac{dx}{dy} + \frac{x}{y} \]

(f) Write the condition if \( \psi_p \) is a particular solution of

\[ \psi'' + \psi = \phi(x) \]

(g) homogeneous of degree \(-1\), when it is exact and

\[ d \phi d \psi - \psi d \phi = 0 \]

(h) Write the solution of the total differential equation

\[ d \phi d \psi = 0 \]

(i) Define Orthogonal trajectories.

\[ d \psi d \psi + d \phi d \phi = 0 \]

(j) Give the integrating factor of the differential equation

\[ x \frac{d\psi}{dx} + \psi = 0 \]

(Compulsory Question)

Select one question from each section.

Note: Attempt five questions. Question No. 1 is compulsory.

[Maximum Marks: 26]

Time: Three Hours

Paper: BM-12

ORDINARY DIFFERENTIAL EQUATIONS

1450

18

SECTION I

Problem 1

\[ 0 = \frac{d^2 z}{dx^2} + \frac{d z}{dx} + \frac{z}{x} \]

(a) Solve the following differential equations:

\[ \frac{d^2 z}{dx^2} + \frac{d z}{dx} + \frac{z}{x} = 0 \]

(b) Solve the following simultaneous equations:

\[ \frac{d z}{dx} + \frac{z}{x} = 0 \]
2) By using the method of undetermined coefficients,

\[ x \cos \theta + \frac{dx}{dz} = \kappa + \frac{xz}{xz'} \]

Solve the differential equation.

3) Solve the following differential equation by changing the independent variable.

\[(x + 1) \log \cos \theta + t = \kappa + \frac{xz}{xz'} (x + 1) \]

4) Solve the differential equation by the method of variation of parameters.

\[ \frac{x}{xz'} = \kappa 6 + \frac{xz}{xz'} 9 - \frac{xz}{xz'} \]

5) Solve the following differential equation by the method of variation of parameters.

\[ x \sin \theta = \kappa z + \frac{xz}{xz'} \frac{z}{z} \]

6) Solve the following differential equation by the method of variation of parameters.

\[ x \tan \theta = \kappa z + \frac{xz}{xz'} \frac{z}{z} \]

SECTION-II

7) Solve the following differential equation.

\[ 0 = \kappa + dx + x d \zeta \]

8) Solve the following differential equation.

\[ 0 = \kappa \zeta + x \zeta^2 - x \zeta^2 \]

SECTION-III

1) Solve the following differential equation.

\[ x^2 d + d = \kappa \]

2) Solve the following differential equation.

\[ x^2 d + d = \kappa \zeta \]

SECTION-I

3) Solve the following differential equation.

\[ 0 = \kappa + x + x (x + \zeta) \zeta + x \zeta (\kappa + \zeta \zeta) \]

4) Solve the following differential equation.

\[ x^2 d + d = \kappa \zeta \]
I. Define scalar triple product and vector triple product.

(a) \( \mathbf{u} \cdot (\mathbf{v} \times \mathbf{w}) = \mathbf{u} \times (\mathbf{v} \cdot \mathbf{w}) \)

(b) Find all the following:

1. \( \mathbf{u} \cdot \mathbf{v} + \mathbf{w} = \mathbf{0} \)
2. \( \mathbf{v} \times \mathbf{w} \)
3. \( \mathbf{u} \times \mathbf{v} \)
4. \( \mathbf{w} \times \mathbf{u} \)
5. \( \mathbf{u} \cdot \mathbf{v} + \mathbf{u} \times \mathbf{w} = \mathbf{0} \)

II. Find the volume of parallelepiped whose edges are represented by

\( \mathbf{a} \), \( \mathbf{b} \), \( \mathbf{c} \), \( \mathbf{d} \), \( \mathbf{e} \), \( \mathbf{f} \), \( \mathbf{g} \), \( \mathbf{h} \).

Evaluate by Stokes' Theorem, where

\[ \mathbf{F} = \mathbf{F}(x, y, z) = (x, y, z) \]

\[ \mathbf{C} = \{ (1, 0, 0), (0, 1, 0), (0, 0, 1) \} \]

Note: Attempt all questions in all sections.

Maximum Marks: 27

Time: Three Hours

Paper: BH-123

VECTOR CALCULUS

CSE/M-18

1457

Total Pages: 4

Roll No.
SECTION I

3. Evaluate \( f(x + h, y + k, z + l) - f(x, y, z) \) \( \Delta x \Delta y \Delta z \) where \( f(x, y, z) = x^2 + y^2 + z^2 \). (q)

2. Evaluate \( f(x, y, z) = x^2 + y^2 + z^2 \) where \( f(x, y, z) = x^2 + y^2 + z^2 \). (q)

SECTION II

3. Find a unit tangent vector to any point on the curve. (b)

2. The necessary and sufficient condition for the vector to have a constant magnitude is \( \frac{\partial}{\partial t} \). (a)

SECTION III

3. \( \phi \Delta x \Delta y \Delta z = 0 \) \( \Delta \). (b)

2. Show that the function of a scalar variable \( t \) has a constant value \( f \). (b)

1. \( \phi \Delta x \Delta y \Delta z = 0 \) \( \Delta \). (b)

SECTION
2. (a) Find the least positive incongruent solution of
    
    \[ 7x \equiv 5 \pmod{256}. \]

2. (b) Show that \( u^7 - u \) is divisible by 42.

2. (c) \( 4n + 3 \), show that there are infinitely many primes of the form

\[ \text{SECTION I} \]

14/4

(1) Prove that \( \frac{4}{9} + \frac{7}{3} + \frac{1}{1} = 1 \).

(2) Express \( x + (\gamma + 1) \) in the form \( A + B \).

(c) Prove that \( u^7 \equiv 1 \pmod{7} \) where \( u \equiv 4 \pmod{7} \) and \( u^7 \) is odd.

14/4

(1) If \( n \) is a power of 2, then prove that \( \varphi(n) \) is odd.

(2) Prove that every two consecutive integers are co-prime.

Computer Question

Select one question from each section.

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

Maximum Marks: 40

Time: Three Hours

Paper: BM-121

NUMBER THEORY AND TRIGONOMETRY

1472

A10.18

Total Pages: 3

Roll No. : 3
SECTION I

9. Find the sum of the series
    \[ \frac{1}{1} + \frac{2}{2} + \frac{3}{3} + \cdots + \frac{n}{n} \]

10. Prove that \( \tan \theta \) is real and imaginary parts.

11. Prove that \( \tan \frac{\theta}{2} \) is real.

12. Prove that \( \tan \frac{\theta}{2} = \frac{\text{opposite}}{\text{adjacent}} \).

SECTION II

13. Evaluate \( \left( \frac{1 + \theta}{1 - \theta} \right) \).

14. Find all \( n \) such that \( \phi(n) = \theta \). Hence find the least such \( n \).

15. Show that \( \theta \) is a solution of \( \tan \theta = \frac{1}{2} \).

SECTION III
2. Solve the D.E.

SECTION 1

2. \( \dot{y} + 2xy = 0 \)

Write the homogeneous equation of order 1.

(c) Write the homogeneous equation of order 1.

2. \( \dot{y} + 2xy = 0 \)

Find the complete solution of the D.E.

(c) Find the complete solution of the D.E.

2. \( \dot{y} + 2xy = 0 \)

Solve the Clairaut's equation \( (y + 1)^2 = c \).

Write the homogeneous equation when \( y = 0 \) and \( N = 0 \) and the equation \( \dot{x} = x + y \).

2. \( \dot{y} + 2xy = 0 \)

Solve the Clairaut's equation.

(c) Solve the Clairaut's equation.

2. \( \dot{y} + 2xy = 0 \)

Solve the simultaneous equations.

(c) Solve the simultaneous equations.
2 \[ \int_{\Omega} \rho \, dV \; \text{find} \; \frac{\partial \rho}{\partial t} - \frac{1}{\sqrt{1 - \rho^2}} \left( \frac{\partial \rho}{\partial x} + \frac{\partial \rho}{\partial y} \right) = 0 \] \] \] (a)

and \( \gamma = 1, \quad \gamma = 1, \quad \gamma = 1, \quad \gamma = 1 \)

\[ \frac{\partial \rho}{\partial t} = |\nabla \Delta|, \quad \frac{\partial \rho}{\partial t} = |\nabla \Delta|, \quad \frac{\partial \rho}{\partial t} = |\nabla \Delta| \]

If \( \mu, \nu \) are orthogonal coordinates, prove that

\[ \int \phi \, dV \; \text{where} \; \phi = \nabla \Delta \]

What is the necessary condition for a scalar point \( \Delta \) to be constant?

Show that vectors \( \mathbf{a} = \overrightarrow{AB} \) and \( \mathbf{c} = \overrightarrow{CD} \) are coplanar.

**Computer Question**

Select one question from each section.

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

**Time:** Three Hours

**Paper:** BM-1.23

**VECTOR CALCULUS**

**CSE/M-18**

**Total Pages: 4**
Find the work done in moving a particle in a force field.

SECTION II

1. Constrain acceleration. Express the vector $\mathbf{a}$ in spherical coordinates.

2. Constrain the acceleration and acceleration of a particle.

3. Constrain the velocity of a particle.

4. Constrain the acceleration of a particle.

5. Constrain the velocity of a particle.

6. Constrain the acceleration of a particle.

7. Constrain the velocity of a particle.

8. Constrain the acceleration of a particle.

SECTION III

9. Constrain the velocity of a particle.

10. Constrain the acceleration of a particle.

11. Constrain the velocity of a particle.

12. Constrain the acceleration of a particle.

13. Constrain the velocity of a particle.

14. Constrain the acceleration of a particle.

15. Constrain the velocity of a particle.

16. Constrain the acceleration of a particle.

17. Constrain the velocity of a particle.

18. Constrain the acceleration of a particle.
UNIT I

1. Explain using mathematical relations the two bodies of same mass and same radius moving with different velocities.

2. Explain using mathematical relations how the mean free path of a gas can have different kinetic energies.

3. Support, when is length is cut to half? How would it affect the mean free path that a gas can travel?

4. When will be the change in (i) pressure, and (ii) total energy of a gas in a closed container if the number of molecules of the gas is doubled?

5. Obtain expression for the moment of inertia of a hollow cylinder (i) about its own axis, (ii) about an axis passing through its centre and perpendicular to its axis. Calculate the results in each case.

UNIT II

1. Pressure of the gas. Explain using mathematical relation how will mean free path of a gas changes with change in temperature and path of a gas changes with change in temperature and pressure. What will be the change in (i) pressure, and (ii) total energy of a gas in a closed container if the number of molecules of the gas is doubled?

2. Two bodies of same mass and same radius moving with different velocities.

Compulsory Question

Scientific calculator and log tables are allowed.

Note: Question No. 1 is compulsory. Attempt four other questions.

Maximum Marks : 40

Time: Three Hours

Paper-I

Properties of Matter and Kinetic Theory of Gas

PHYSICS

GSEB-M-18

Total Pages: 4

PQ No. 1477/12/100/KD.48

4. What do you mean by mean free path of a gas?
UNIT I

1. Calculate the degree of freedom of a gas in equilibrium with its liquid and solid phases.

2. Explain the term 'boiling point' in the context of a gas.

3. What are the main assumptions of kinetic theory of gases?

UNIT II

1. Define the term 'radius of gyration' in terms of energy and moment of inertia of a rotating body in terms of the radius of the gyration. Calculate the kinetic energy of the body.

2. Define the term 'radius of gyration'.

3. A sphere, a disc, a spherical shell and a ring of same mass and angular velocity of the body.

UNIT III

1. Describe the theory for determining the various elastic constants by shear's method.

2. What do you mean by work done by torque? Show that the rate of change in the moment of a body is equal to the product of torque acting on the body and the rate of angular velocity of the body.
UNIT I

1. Explain the formation of depletion region in an open circuit pre junction.

2. (a) Explain the working of LED and Photodiode.

(a) What are mobility and conductivity? Obtain an expression for conductivity of doped semiconductor.

(b) Sketch V-I characteristic of a NPN transistor is CE is 10 mA, what is the value of base current?

(c) A transistor has a typical of 0.967. If the emitter current feedback is 2. Write advantages and disadvantages of negative feedback.

Compulsory Question

Each unit question No. 1 is compulsory.

Note: Attempt five questions in all, selecting one question from each unit.

Maximum Marks: 40

Time: Three Hours

Paper II

Semiconductor Devices

PHYSICS

GSEB-18

Total Pages: 3
UNIT III

1. (c) Give applications of CE configuration.

2. (b) Derive relations between $Q_1$ and $V_2$ in case of transistor

3. (a) Define and switching for in case of CE configuration over CB

OR

UNIT II

7. (a) Describe L-type filter. Find expression for its ripple

8. (a) Describe principle, construction and working of a CRO.

OR

UNIT I

6. (a) Discuss the merits and demerits of CE amplifier.

5. (a) What are the advantages of CE configuration over CB

OR

3. (a) Explain the criterion for sustaining oscillations.

4. (a) Define stability factor of a transistor.

5. (a) Can emitter and collector be interchanged in a transistor?
2. (a) Explain the difference between inter-molecular and intra-molecular hydrogen bonding.

**SECTION A**

(1×8=8)

Which factor is responsible for non-metallic character of halogen?

B) Name other allotropes form of oxygen.

C) Write down the formula of carbon acid.

D) When is alpha region.

E) Which hybridisation is involved in XeF?.

F) Why alkali metals act as strong reducing agent?

G) What is dipole?

H) What is other name given to dipole-dipole forces.

**Compulsory Question**

Questions from section A and B.

Note: Question 4 is compulsory. In addition to question 4, I answer four more questions selected at least two.

Maximum Marks : 32

Time: Three Hours

**Paper - IVC-H-104**

I. Organic Chemistry

CHEMISTRY

1479

GSEM/18

Roll No.

Total Pages : 3
SECTION B

5. Draw and discuss the structure of the following:
   - $\text{XeOF}_3$
   - $\text{XeOF}_6$

6. (a) Explain why $\text{XeOF}_3$ is more ionic than $\text{XeOF}_6$.
   (b) Draw the structure of $\text{XeOF}_3$ and $\text{XeOF}_6$.

7. (a) Discuss the action of diborane with ammonia and with $\text{HCl}, \text{HClO}, \text{and HClO}_2$.
   (b) Why is sparingly soluble in water but readily dissolves in $\text{KCl}$?
   (c) Why are isoelectronic compounds? Discuss their phosphorus and red phosphorus.
   (d) Differentiate between the structures of white and black phosphorus.
   (e) Explain why hydrolysis forms $\text{H}_2\text{PO}_2$ and $\text{HNO}_2$.
   (f) Write the structure of $\text{H}_2\text{PO}_2$ and $\text{HNO}_2$.
   (g) Why are phosphites more covalent than phosphates?
   (h) Give one example of each.
   (i) Give one example of each.
   (j) Why do they differ from $\text{H}_2\text{PO}_2$ and $\text{HNO}_2$?
   (k) How do they differ from $\text{H}_2\text{PO}_2$ and $\text{HNO}_2$?
   (l) Write the structure of $\text{CaCl}_2$.
   (m) Write the structure of $\text{CaCl}_2$.
   (n) What is the effect of NaOH on semiconductors?
   (o) What is the effect of NaOH on semiconductors?
   (p) Why does it exist in ionic form?
2. (a) What is Collision theory for unimolecular reaction?

SECTION A

I. (f) State Ostwald dilution law.

2. (b) Why specific conductivity decreases when dilution of solution increases?

(e) Why specific conductivity decreases when dilution of solution decreases?

1. (d) Express the rate of reaction in terms of appearance of product and disappearance of reactant of the reaction.

Molecularity?

(c) What is the difference between Order and molecularity?

(b) Define Buffer index.

I. (a) Define the term Threshold energy and Activation energy.

Compulsory Question

Questions carry equal marks.

Compulsory. Select no questions from each section. All questions carry equal marks.

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

Time: Three Hours

Maximum Marks: 32

PAPER-V (CH-103)

UNIVERSITY

CHEMISTRY

CE/SE/18

1481

ROLL NO.

TOTAL PAGES: 3
Write a short note on Electrophilic effect.

6. (a) State and explain the three applications of Kohlrausch

SECTION-B

Examples.

1. (c) What are Pseudomolecular reactions give

2. (c) Prove that \( \frac{1}{[\text{H}^+]} \approx \frac{1}{1} \)

3. (a) What are the different methods of determination of order of reaction?

4. (a) When are second order reactions measured? Explain the expression

5. (a) What is the slope of Arrhenius plot is found to be –7610 K.

6. (c) What do you mean by Half life of reaction?

7. (a) What is Rate of Reaction? Explain any three factors

7. (a) A first order reaction is 40% complete in 30 minutes.
(a) What do you understand by the term orientation?
(b) Write the balanced chemical equation for the reaction.
(c) Give the product of hydroxylation-oxidation of

Propan-2-amine

(HCH2CH2NH2)

(d) Explain 3,4-dihydropyridine-1,4-dione reaction.

\[
CH_3CH=CHCH_3 + H_2O \rightarrow CH_3CH=CHCH_2OH
\]

(e) Give the product of hydroxylation-oxidation of

\[
\text{Product}
\]

(f) Describe the mechanism of oxidation of benzene.

Benzenes is unsaturated hydrocarbon, yet it fails to give

\[
\text{Product}
\]

(g) What compounds give examples also.

(h) Aromatic, anti-aromatic and non-aromatic

\[
\text{Product}
\]

(i) Why are aromatic, anti-aromatic with suitable examples.

(j) Discuss the mechanism of reaction of benzene.

(k) Why halogen are ortho-para-directing though they are

(l) Explain the reaction with suitable representation.

(m) Explain 1,2 hydride shift with suitable example.

(n) Give the mechanism of dehydroxylation of n-butylic alcohol.

(o) What is Markovnikoff's rule? Explain with suitable

(p) Give the product of hydroxylation-oxidation of

\[
\text{Product}
\]

(q) Explain 3,4-dihydropyridine-1,4-dione reaction.
SECTION-B

1. When are the factors which favor(s) Diels Alder reaction accompanies by partial racemization.

2. Explain why Sn reactions of alkyl halides are benzene.

3. Convert benzene diazonium chloride into chloro- 

4. Give the product of the following reactions:

SECTION-A

1. What happens when 2-butyne is treated with sodium in liquid ammonia?

2. Why are terminal alkynes more reactive than alkyl halides.

3. Draw energy profile diagram of Sn1 and Sn2 reactions.

4. Give the IUPAC name of

CH3

CH3

CH3

CH3

CH3
Each soldier knows his could be him lying on the ground, with arms and legs in victory's grasp. A man fights another: One wins, one loses. It is the same.

OR

(5) What have machines become today?
(6a) For what purpose were the machines made?
(6b) How are we using science today?
(6c) What has science given us?
(6d) What is the great defect of our civilization?

Then they were in a fair way to become his masters to be man's servant; yet he has grown so dependent on them machines, machines, as I have already explained, were made children. For example, we do not know how to manage our children. For example, we do not know how to manage our things. We use them. We use them, they use us. What will the gods do with this knowledge? Science as we have seen, has yet another defect in our civilization. It is that it does not know the end.

I. Read the following passage and answer the questions given at

Note: Attempt all questions.

Maximum Marks: 40

Time: Three Hours

1485

1485

ENGLISH

GS/MA-18

Total Pages: 7

Roll No. .................
There are no Chelsea or American missiles if there are no Khlil'-s.

The argument based on the interpretation of Yanks' text is

OR

their spontaneous questions in case they didn't

mention of our teachers and teachers acting alike

by means of regardless of whether they understood the subject

Indian schools have been no different. Children are encouraged

So far as printing a hit on a child's curiosity is concerned,

Explain with reference to the context:

(a) Reciprocity.

(b) Serious.

Find words from the passage which mean the same as:

(i) When has always been a feature of military action?

(ii) Which nation proposed about a big change in satellite?

Which does each soldier know in the background?

How do men and animals gain victory?
The New Year is the time for resolution. However, the enthusiasm that results from failure.

The first step is to set up a resolution that is meaningful and achievable. I set down the resolution that I want to achieve in the coming year. I want to improve myself in all aspects of my life. I want to learn new skills and improve my existing ones. I want to be more organized and efficient in my daily life.

The second step is to break down the resolution into smaller, manageable goals. I create a plan of action that includes specific steps to achieve my resolution. I set deadlines for each goal and track my progress regularly.

The third step is to seek support and encouragement from others. I share my resolution with my family and friends and ask for their support. I also join groups or clubs that are related to my resolution and participate in their activities.

The fourth step is to stay motivated and committed to my resolution. I remind myself of the reasons why I want to achieve it and the benefits that it will bring. I celebrate my successes along the way and learn from my failures.

The fifth step is to review and adjust my resolution as needed. I assess my progress and make necessary changes to my plan if needed. I stay flexible and adaptable to new situations and challenges.

In conclusion, the New Year is a great time to set up resolutions and make positive changes in our lives. With determination and hard work, we can achieve our goals and improve ourselves.

Read the following passage and answer the questions that follow. (For Non-Hindi speaking/Foreign students only)

The most big cities are polluted. There is every means of transportation but not fresh air in the city itself. There are no trees or roads for the poor. A big city is also quite noisy and crowded. The noise and traffic make it difficult for the people to live there. However, there are some new buildings and roads that promise better society of educated persons and many opportunities to get better success. There are high rise buildings, parks, parks, and schools.

Life in a big city is a life of the heaven for the richest persons.
conditions in your locality.

Write a letter to the District Health Officer about the insanitary

OR

on denouement and Indian economy:

8

Write a letter to the Editor of a newspaper about your views

7

Decree.

(!) Drawbacks.

Drawbacks.

the similar meaning to the following:

Find out the words in the above passage which convey

(d) New Year's Day.

(5) Why did he write a letter to carry our his resolution on

(e) everywhere?

Why is it a basic mistake to announce our resolution to

(b) Why does our fall in our efforts to self-improvement?

(a) problems! But I just have not had time to read it.

Read a Thousand Words a Minute; promises it will solve my

reading. In fact, I have just bought a book entitled How to

presumably to read. The promise to do my resolution to do more

screen. I still have not given up my resolution to do more

and know? I went downstairs and sat in front of the television

my eyes glued to a book. One night however, feeling cold

effect of resolution. I sat in my room for a few evenings with

reading when I got home from work. Resisting the hypnotizing
What is the use of obluge spina in the rhizoids?

(b) Name two types of capsules found in the stem of

(c) What is Palse Indium?

(d) From where were the fossils of RHYNIA discovered?

(e) Name two species of MARCHANTIA found commonly

(f) What is siphonostele?

(g) You have studied

(h) What is acquous moss? Give one example which

(i) What do you mean by phrophore?

I. Write short answer of the following

Compulsory Question

carry equal marks.

1. Draw neat and well labelled diagrams. All questions

Each question No. 1 is compulsory. Short answers

Note: Attempt five questions in all selecting two questions from

Paper: I

Time: Three Hours

TOTAL

CSE/M-18

1488

ROLL No. .........................................
8. (a) Describe the sex organs and act of fertilization in
     (b) PTERIS.

4. Draw a well-labelled diagram of T.S. phloem of
     (a) Pteridophytes as first vascular plants.

4. Sporogonium of RHYNIA.

7. Write notes on:

4. SELAGINELLA. What do you know about the spore producing organs
    of SELAGINELLA. Describe the structure of female gametophyte of
    SELAGINELLA.

UNIT-III

8. Gametophytic male of MARCHANTIA.

5. Give an account of external morphology and anatomy of
    FUNARIA.

3. (a) Give the structure and functions of peristome in
     (b) FUNARIA.

5. (a) Describe the structure and position of sex organs in
     and compare it with that of MARCHANTIA.

8. Give an illustrated account of sporophyte of ANTHOCEROS
     BYPOPHYTES.

2. Give a detailed account of economic importance of

UNIT-I
UNIT-I

1. Define the following :  
(a) Heredity  
(b) Genus  
(c) Phasmids  
(d) Multiple Alleles  
(e) Linkage  
(f) Chromosome  
(g) Autosomes  
(h) Phenotype

2. Describe the structure of DNA.


4. Give the role of the following in protein synthesis:
   (a) t-RNA  
   (b) m-RNA  
   (c) t-RNA  
   (d) Ribosomes

5. Write short notes on the following:
   (a) Transposable Genetic Elements  
   (b) Extranuclear Inheritance

6. Give a concise account of inducible and repressible operon.

7. What are induced mutations? Give a brief account of the various physical and chemical mutagens.

8. Give the role of the following in protein synthesis:
   (a) t-RNA  
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   (c) t-RNA  
   (d) Ribosomes

UNIT-II

1. Write in brief on the following:
   (a) Properties of Genetic code  
   (b) Nucleosome

2. Give a concise account of inducible and repressible operon.

3. Define Allelic and Non-Allelic Gene Interaction, and explain its significance.

4. Suppose we want to select five questions from each unit. All questions carry equal marks. Compulsory: Select two questions from each unit. All questions carry equal marks. Attempt five questions in all. Question number 1 is compulsory. All questions carry equal marks.

5. Write short notes on the following:
   (a) Genetics  
   (b) Botany

Time: Three Hours  
Maximum Marks: 40

1. 1989  
2. Total Pages: 2

Note: Attempt five questions in all. Question number 1 is compulsory. All questions carry equal marks.

Paper: II  
GSEB-M.18  
Botany  
1989  
Roll No.  
2

1. (4+4=8) Give the role of the following in protein synthesis:
   (a) t-RNA  
   (b) m-RNA  
   (c) t-RNA  
   (d) Ribosomes

2. Write short notes on the following:
   (a) Transposable Genetic Elements  
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Time: Three Hours  
Maximum Marks: 40

1. 1989  
2. Total Pages: 2

Note: Attempt five questions in all. Question number 1 is compulsory. All questions carry equal marks.

Paper: II  
GSEB-M.18  
Botany  
1989  
Roll No.  
2

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   (a) Transposable Genetic Elements  
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UNIT-II

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Time: Three Hours  
Maximum Marks: 40

1. 1989  
2. Total Pages: 2

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Paper: II  
GSEB-M.18  
Botany  
1989  
Roll No.  
2

1. (4+4=8) Give the role of the following in protein synthesis:
   (a) t-RNA  
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   (a) Transposable Genetic Elements  
   (b) Extranuclear Inheritance

3. Give a concise account of inducible and repressible operon.

4. Define Allelic and Non-Allelic Gene Interaction, and explain its significance.

5. Write in brief on the following:
   (a) Properties of Genetic code  
   (b) Nucleosome

UNIT-I

1. Define the following :  
(a) Heredity  
(b) Genus  
(c) Phasmids  
(d) Multiple Alleles  
(e) Linkage  
(f) Chromosome  
(g) Autosomes  
(h) Phenotype

2. Describe the structure of DNA.


4. Give the role of the following in protein synthesis:
   (a) t-RNA  
   (b) m-RNA  
   (c) t-RNA  
   (d) Ribosomes

5. Write short notes on the following:
   (a) Transposable Genetic Elements  
   (b) Extranuclear Inheritance

6. Give a concise account of inducible and repressible operon.

7. What are induced mutations? Give a brief account of the various physical and chemical mutagens.

8. Give the role of the following in protein synthesis:
   (a) t-RNA  
   (b) m-RNA  
   (c) t-RNA  
   (d) Ribosomes
2. (a) Describe the structure of body wall in Earthworm.

SECTION A

(f) Non-disjunction.
(o) Plasmodium.
(g) Cross-inheritance.
(h) Free-martin.
(i) Polyploidy.
(j) Disease.
(k) Hemolymph.
(l) Microscopic cells.

SECTION B

Answer the following:

COMPULSORY QUESTION

Whenever necessary, draw diagram to answer each section question. No. 2 is compulsory. Draw diagram in all sections. No. 2 selects two questions from Nos. 1 to 4.

Maxima marks: 40

Time: Three Hours

PAPER: I
- Anthropod and Cereals
- Life and Diversity from America to India
- ZOOLOGY
- GS/M. 18

ROLL No. 1490/3.20K/D/61

Page 2 of 2
9. Explain the role of environment on determination of sex in Drosophila.

8. What is cytoplasmic inheritance? Explain the inheritance of sex and determine by what means it is transmitted.

7. Write note on recessive epistasis with suitable examples.

6. What is Epistasis? Differentiate between dominant and recessive epistasis with suitable examples.

SECTION B

5. Write note on:

4. Describe the respiratory organs of cockroach.


2. Sense organs in Earthworm.

1. Describe the process of cocoon formation in Earthworm.
SECTION-A

(a) What is Phenytoinum? 
(b) Define DNA Finger Printing.
(c) What are Okazaki Fragments?
(d) Define B-Zone.
(e) What is Phenytoinum? 
(f) What is Phenytoinum? 
(g) Explain Translocation.
(h) Describe digestive system of Plan.

SECTION-B

(a) What is general diagnosis? 

5+3

(b) Explain Genetic code, Describe various features of Genetic code.
(c) Explain a semi-conservative mode of DNA Replication.
(d) Write a brief account on formation of nucleotide and polypeptide chain.
(e) Describe Phenytoinum. 
(f) Explain ABO blood group in human beings, and its inheritance.
(g) Explain Hemal system in Ascaris.
(h) Draw a well-labeled diagram of Ascaris through arm and central disc (Diagram only).

3+3

(a) Describe Tocopherol Larg.
(b) Give an account of water vascular system in Ascaris.
(c) Explain Hemal system in Ascaris.
(d) Explain ABO blood group in human beings, and its inheritance.

[Maximum Marks: 40]

Time: Three Hours

Paper II
Zoology

Roll No...

1991

CSM-18

Total Pages: 2
UNIT-1

MOSFET

What do you mean by Inversion Layer in Enhancement

What do you mean by Direct Coupling?

What is the function of Emitter Resistor in Bias Circuit

What is the function of Emitter Resistor in Bias Circuit

Why operating point of a transistor is selected in the

Compulsory Question

until Question No. 1 is compulsory.

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

Maximum Marks: 40

Time: Three Hours

PAPER 1 (THEORY)

Electronic Devices and Circuits-II

1494

GSE/MA/18

ROLL NO.

1494/700/KD/65

4

m}
UNIT III

Amplifier

Discuss the frequency response of two stage RC coupled amplifier.

7.

Discuss the advantages and disadvantages of Direct Coupled amplifier.

8.

Discuss the working of two stage Transformer Coupled amplifier.

6. (a) Why will fail in high frequency range is two stage RC coupled amplifier?

UNIT-H

Not shown.

(a) Calculate the highest value of $R_C$ permissible in the following circuit:

(b) Discuss Thermal Insulation in detail.
UNIT-I

2. (a) Using Superposition Theorem calculate the current in the AB branch of the circuit given below.

2. Why admittance parameters are also known as short-circuit parameters?

2. What is the condition for maximum power transfer?

2. What should be the condition for source transformation?

2. What do you understand by Open-circuit voltage and short-circuit current?

5. Attempt all the following

Compulsory Question

Note: Question No. 1 is Compulsory. Attempt any question from

Maximum Marks: 40

Time: Three Hours

PAPER-II

(Network Analysis)

ELECTRONICS

1995

Total Pages: 4

ROLL NO.

UNIT-IV

1. Find out Z-parameters of the following circuit.

3. Calculate the input impedance of the following network in terms of Z-parameters.

5. Load resistance ZS at the input in terms of Z-parameters.

7. Derive the output impedance of two-port network with

network. What is the latter equivalent of a symmetrical network?

8. Show the parameters of two-port network in series. 5
7. (a) Define Transmission parameters.
(b) Find out the open circuit parameters.
(c) Draw the circuit of transistor in CB configuration and explain.


UNIT III

[Diagram of a circuit with labeled components: V, 2, 8, 10, 1, 4, and 6.]

Millman's theorem:
(b) Calculate the load current I_L of the circuit using the theorem.
(c) What do you understand by Dual and Duality? Explain.

UNIT II

[Diagram of a network with labeled nodes and connections: V, E, R, and L.]

5. (a) Discuss Node method for the given network.
(b) Explain KCL and KVL.
(c) How a Star network is converted into Delta network.
(d) How much value of load resistance is required for maximum power transfer?
UNIT-I

UNIT-III

UNIT-II

Note: Attempt five questions in all. Selecting one question from each unit. Question 1 is compulsory. All questions carry equal marks. Maximum Marks: 40

Time: Three Hours

Paper 1: Programming in C

CS/EM-18

1996

R01I No. 2
UNIT-I

1. Write a momentary circuit diagram.
2. Draw the circuit diagram of a full adder.
3. Draw the circuit diagram of a half adder.
4. Draw the circuit diagram of a 4-bit binary adder.
5. Draw the circuit diagram of a 8-bit binary adder.
6. Draw the circuit diagram of a 16-bit binary adder.
7. Draw the circuit diagram of a 32-bit binary adder.
8. Draw the circuit diagram of a 64-bit binary adder.
9. Explain the operation of a full adder using a truth table.
10. Explain the operation of a half adder using a truth table.
11. Explain the operation of a full adder using a Karnaugh map.
12. Explain the operation of a half adder using a Karnaugh map.
13. Prove that (A+B)(A+C)=A+B+C.
14. Prove that (A+B)(B+C)=A+B.
15. Simplify the following Boolean equations using Boolean algebra.

UNIT-II

1. Explain the working of a clocked SR flip-flop. Also explain its advantages.
2. Explain the working of a clocked D flip-flop. Also explain its advantages.
3. Explain the working of a clocked JK flip-flop. Also explain its advantages.
4. Explain the working of a clocked T flip-flop. Also explain its advantages.
5. Explain the working of a clocked master-slave flip-flop. Also explain its advantages.
6. Explain the working of a clocked edge-triggered flip-flop. Also explain its advantages.
7. Explain the working of a clocked level-triggered flip-flop. Also explain its advantages.
8. Explain the working of a clocked toggle flip-flop. Also explain its advantages.
9. Explain the working of a clocked set-reset flip-flop. Also explain its advantages.
10. Explain the working of a clocked clear-reset flip-flop. Also explain its advantages.
11. Explain the working of a clocked set-clear flip-flop. Also explain its advantages.
12. Explain the working of a clocked set-reset-clear flip-flop. Also explain its advantages.
13. Explain the working of a clocked set-clear-reset flip-flop. Also explain its advantages.
14. Explain the working of a clocked set-reset-clear-reset flip-flop. Also explain its advantages.
15. Explain the working of a clocked set-clear-reset-clear flip-flop. Also explain its advantages.
16. Explain the working of a clocked set-clear-reset-clear-reset flip-flop. Also explain its advantages.
17. Explain the working of a clocked set-clear-reset-clear-reset-clear flip-flop. Also explain its advantages.
18. Explain the working of a clocked set-clear-reset-clear-reset-clear-reset flip-flop. Also explain its advantages.
20. Explain the working of a clocked set-clear-reset-clear-reset-clear-reset-clear-reset flip-flop. Also explain its advantages.

UNIT-III

1. What is a Karnaugh map? What are the rules to reduce a Karnaugh map?
2. What is the difference between a half adder and a full adder?
3. What is the difference between a clocked SR flip-flop and a clocked T flip-flop?
4. What is the difference between a clocked D flip-flop and a clocked JK flip-flop?
5. What is the difference between a clocked master-slave flip-flop and a clocked edge-triggered flip-flop?
6. What is the difference between a clocked set-reset flip-flop and a clocked clear-reset flip-flop?
7. What is the difference between a clocked toggle flip-flop and a clocked level-triggered flip-flop?
8. What is the difference between a clocked set-reset-clear flip-flop and a clocked set-clear-reset flip-flop?
9. What is the difference between a clocked set-reset-clear-reset flip-flop and a clocked set-clear-reset-clear flip-flop?
10. What is the difference between a clocked set-reset-clear-reset-clear flip-flop and a clocked set-clear-reset-clear-reset flip-flop?
11. What is the difference between a clocked set-reset-clear-reset-clear-reset flip-flop and a clocked set-clear-reset-clear-reset-clear flip-flop?
12. What is the difference between a clocked set-reset-clear-reset-clear-reset-clear flip-flop and a clocked set-clear-reset-clear-reset-clear-reset flip-flop?
13. What is the difference between a clocked set-reset-clear-reset-clear-reset-clear-reset flip-flop and a clocked set-clear-reset-clear-reset-clear-reset-clear flip-flop?

Note: Attempt five questions in all, selecting one question from each section. Question No. 1 is compulsory. All questions carry equal marks.
UNIT I

1. Define the following terms:
   a) Virus
   b) Encryption
   c) Email
   d) WWW
   e) WWW

2. Explain briefly the concept of Data mining and GPS.

3. Define Mother Board and Memory.

4. Explain in detail the meaning of Port. Discuss Serial port, Parallel port and USB port.

5. Briefly explain the term OLAP and Electronic Catalogue.

6. Explain how data compression takes place. Explain various techniques involved in data compression.

7. Structure of MIDI messages.

8. What is the task of User agent in Electronic mail?

8. What do you mean by Computer network? Explain the three categories of networks.

UNIT II

8. Parallel port and USB port.

UNIT III

8. Explain the concept of MIDI hardware aspects of MIDI and

9. Explain briefly the concept of Dragmining and GPS.
UNIT I

1. Discuss the use of bitwise operators in C.
2. Write a program in C for merge sort.
3. What is the concept of algorithm?
4. What do you understand by programming methodologies?

UNIT II

1. Discuss unary operator in C.
2. Discuss precedence and operator in C.
3. What is the use of continue statement?
4. Explain break and continue.
5. Write a program in C for matrix transpose.
6. Write a program in C for matrix transpose.

UNIT III

1. Explain union, union and continue statements in C.
2. Explain various looping statements in C.
3. Why we avoid goto statement in programs?
4. Explain various looping statements in C.
5. Discuss ESE-IF ladder in C.
6. Why we avoid goto statement in programs?
7. Explain the use of break and continue statements in C.
8. Explain the use of register statement in C.

COMPUTER APPLICATION

1502/6.300/KD/72

ROLL NO. 2

TOTAL PAGES: 2
UNIT I

Causative agent for cholera.

UNIT II

Explain the principle and method of differential staining.

UNIT III

Describe use of microscope as a method of sterilization.

Section Four

Microbiology

Question (a)

What is Spontaneous generation? Explain how Louis Pasteur achieved.

Question (b)

Describe photosynthetic apparatus in bacteria. 3:2

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

Maximum Marks: 40

Time: Three Hours

Paper - III

(General Microbiology)

BIO TECHNOLOGY

3.

What is Spontaneous generation? Explain how Louis Pasteur achieved.

2.

Why any new Leucovorin called as Futher of Microbiology?

1.

Define commenion on the following:

Compulsory Question

6.

Write short notes on:

5.

Explain the principle and method of differential staining.

4.

Give the principle and method of differential staining.

3.

What is Spontaneous generation? Explain how Louis Pasteur achieved.

2.

Why any new Leucovorin called as Futher of Microbiology?

1.

Define commenion on the following:

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

Maximum Marks: 40

Time: Three Hours

Paper - III

(General Microbiology)

BIO TECHNOLOGY

3.

What is Spontaneous generation? Explain how Louis Pasteur achieved.

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Define commenion on the following:

Compulsory Question

6.

Write short notes on:

5.

Explain the principle and method of differential staining.

4.

Give the principle and method of differential staining.

3.

What is Spontaneous generation? Explain how Louis Pasteur achieved.

2.

Why any new Leucovorin called as Futher of Microbiology?
3

(a) Define the terms:

(b) Two peptide homones.

(c) Two amino acids.

(d) Two amino acids with nucleophilic groups in side chains.

(e) Two remarkable properties of enzymes.

(f) Two membrane bound enzymes.

(g) Two hydrolases.

4. Mention the names of the following:

Compulsory Question

Note: Attempt five questions in all, selecting two questions from each section. Question No. 1 is compulsory. All questions carry equal marks.

Maximum Marks: 40

Total Pages: 3

Paper: 1V
Biotechnology-II
BIOENGINEERING

1507

Total No. of

Roll
SECTION A


5. TCA is an amphibolic pathway. Justify.


SECTION B

4. Give an equation. Which enzyme is responsible for this reaction? Give the name of the enzyme.

5. Explain the name of the enzyme catalyzing this reaction. Write the reaction of TCA where carbon is lost as carbon dioxide. Explain why.

6. Explain why "Anabolism is not simply reversal of Catabolism."
2. Describe the animal cell structure in detail.

Unit I (Chapter 1)

(2) (3) (4)

(1) (2) (3) (4)

Protoplasmic Action

(c) Functions of Lunes

(d) Reflex Action

(b) Blood Pressure

(a) Meiosis

I. Describe the following:

Compulsory Question (Attempt Any Two)

Note: Attempt Five Questions in All, selecting at least Two

Time: Three Hours

Paper III

HUMAN PHYSIOLOGY

1828

GE/M-18

Roll No.

Total Pages: 03
6. Explain the various parts of respiratory passage along

Unit II ( geniş (II)

1. Explain the sense organs in detail

2. Large intestine

3. Write short notes on the following:

4. Functions of salivary glands

5. Describe the following:

6. Name and numbers of bones of vertebal column.

7. Describe the structure and functions of kidneys in detail.

8. Draw well labelled diagram of female reproductive organs.

9. Draw well labelled diagram of heart and write functions of heart.
1. Discuss birth process and stages of delivery.

2. Write short notes on the following:

   (a) Conception
   (b) Prenatal development

Unit I (4 marks)

Time: Three Hours

Maximum Marks: 40

Course No. 112

CARE

PRENATAL AND INFANT GROWTH AND DEVELOPMENT

1829

GSE/M-18

Roll No. 03
Discuss in brief the physical characteristics of neonate.

1. Discuss in brief the physical characteristics of neonate.

2. Write short notes on the following:

(a) Physical development during infancy

(b) Immunization

3. Explain the following:

(a) Reflex actions

(b) Growth and development

4. Explain the factors affecting delivery process and also mention different types of birth.

5. Explain common diseases during infancy and care to be taken.

6. Explain common diseases during infancy and care to be taken.

7. 4=8

8. Explain motor and social development of infant (0-2 yrs).

9. Explain the formulas of pregnancy and suggest their remedies.

10. Write in detail the complications of pregnancy and suggest

11. Compositional Question ((mutually exclusive)

12. 2x4=8
1. Which briefly answer the following:

(a) Napping finish
(b) Removal of Tea and Coffee Stain
(c) Use of Shrinkage Board
(d) Optical Diffusioners

II. Compulsory Question (Answer Any Two)

Note: Attempt Five questions in all, select two questions Carry equal marks.

Course No. 113
Fabrics
Laundry Science and Finishing of GSE/M-18

Total Pages: 03
Roll No. 03
6. Explain different methods of removing stains. Write the classification of stains.

5. Explain different types of starches with their method of preparation and application.

4. Explain Oxidizing and Reducing Bleaching agents in detail.

3. Differentiate between soap and detergent. Discuss their components.

2. Write in detail about the washing and cleaning of clothes.

1. Write in detail about the care and storage of woolen clothes.

2. Write in detail about the washing and cleaning of clothes.
Home Management

II.

Write down the various steps involved in the process of

I.

Explain the objectives of Home Management by defining

Unit I

Note: Attempt five questions in all, selecting two questions from each unit. Q. No. 9 is compulsory. All questions carry equal marks.

Course II

INTRODUCTORY HOME MANAGEMENT

GSE/M-18

1831

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

TOTAL PAGES: 03
5. Classify goals and write down the characteristics of goals.

6. Define decision-making. Write down the steps involved.

7. Explain different types of resources in detail by describing them.

8. Write down the classification and characteristics of values.

9. Explain in 3-4 lines each:

- Difference between human and non-human resources.
- Difference between long term and short term goals.
- Definition of organizing and evaluation.
- Definition of standards.

Complementary Question (犒ษמדוקא)
section on body:

a. Carbohydrates and lipids (fats) have protein sparing
deficiency of vitamin E.

b. Pigeon chest and bow legs are the symptoms of
yellow

In which deficiency the colour of the tongue turns
deficiency of sodium causes cough.

Excess of protein in diet causes malnutrition.

These prevent congenital.

1. State whether the following statements are true or false:

Compulsory Question (क्षमिति विषय)

Note: Attempt five questions in all, selecting two questions

Maximum Marks: 40

Time: Three Hours

Course 115

BASIC NUTRITION

GSE/M-18

ROLL NO.

TOTAL PAGES: 04

9. Write short notes on any four of the following:

(i) Functions of sodium.

(ii) Deficiency and sources of iodine.

(iii) Phosphorus.

(iv) Effects of deficiency of iodine.

(v) Security.

(vi) Anemia.

8. What role does calcium play in our body? Discuss the

Unit II (Unit II)

1. What are the functions of Inulin? Explain sources and effects of deficiency.

2. Define liquids and discuss their functions, sources, and effects of excess.

3. Discuss the functions of water. What are the effects of deficiency and excess water in body? Explain.

4. What are the functions of carbohydrates in our body? Explain.

5. Explain the following:

6. Describe the functions and effects of deficiency of Vitamin A. Name the sources of Vitamin A in diet.

7. When are the functions of Inulin? Explain sources and effects of deficiency of Inulin.

I. Briefly describe the following:

1. Compulsory Question (အလိုလျင်မှု)

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

Maximum Marks: 40

Time: Three Hours

Nutritional Biochemistry

Course 116

HOME SCIENCE

1833

GSE/M-18

Q.1. Write short notes on the following:

(a) 3D disease
(b) Coenzyme
(c) Essential amino acids
(d) Protein synthesis
(e) Enzyme catalysed reaction
8. What are enzymes? Discuss their importance in living systems.

7. Discuss the biological functions and deficiency symptoms of Vitamin A.

6. Give structure and discuss the functions of deficiency of Vitamin A.

5. (a) DNA and RNA. Differences between the structure and functions of DNA and RNA.

4. (a) Describe the digestion of carbohydrates in human beings.

3. (a) Classify carbohydrates based upon their composition.

2. (a) Define carbohydrate value. Discuss its significance.

1. Define carbohydrate value. Discuss its significance.

8. Temperature of reaction mixture.

8. Define carbohydrate value. Discuss its significance.

7. Discuss the biological functions and deficiency symptoms of Vitamin A.

6. Give structure and discuss the functions of deficiency of Vitamin A.

5. (a) DNA and RNA. Differences between the structure and functions of DNA and RNA.

4. (a) Describe the digestion of carbohydrates in human beings.

3. (a) Classify carbohydrates based upon their composition.

2. (a) Define carbohydrate value. Discuss its significance.

1. Define carbohydrate value. Discuss its significance.
1. Explain recursion with examples.
2. Explain the difference between functions and symbols.
3. Write a program in C to print the following:
   \[ 4 \times 4 = 16 \]
4. What are strings in C? Write a program to check whether strings are palindrome or not.
5. What are strings in C? Write a program to check whether strings are palindrome or not.
6. Explain the following:
   \[ 8 \times 2 = 16 \]
7. What are the different ways in which files can be categorized in C? How errors are detected in files of C?
9. Write a program in C to print series using recursive function.
10. Write a simple program to print arguments.
11. Write a simple program to print arguments.
12. Explain the different type of operations in C.
13. Explain passing by value and call by reference in C with suitable examples.
14. Explain pass by reference in C with suitable examples.
15. Explain pass by reference in C with suitable examples.
16. Explain pass by reference in C with suitable examples.

**Note:** Attempt 4 questions. Q. No. 1 is compulsory select one question from each unit. Maximum Marks: 80

**BCA-121**

**ADVANCED PROGRAMMING IN C**

**BCA/M-18**

**Total Pages:** 02
8. Write down the execution table for RS flip-flop.
8. Explain with the help of suitable example.
8. When do you mean by clocked RS flip-flop?

Unit I

4. Explain memory core memories.

(Compulsory Question)

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

Maximum Marks: 80

BCA-I22
COMPUTERS-II
LOGICAL ORGANIZATION OF
BCA/M-18

Total Pages: 03
8. Explain the following arithmetic instruction formats:
   - (a) Various address instruction formats.
   - (b) Explain the following arithmetic instruction using
     - (A) Explain the Direct, Implicit, and Register addressing
       - (Aa) Explain the Direct, Implicit, and Register addressing.

Unit II

8. Explain the following arithmetic instruction formats:
   - (a) Various address instruction formats.
   - (b) Explain the following arithmetic instruction using
     - (A) Explain the Direct, Implicit, and Register addressing
       - (Aa) Explain the Direct, Implicit, and Register addressing.

Unit III

8. Explain the following arithmetic instruction formats:
   - (a) Various address instruction formats.
   - (b) Explain the following arithmetic instruction using
     - (A) Explain the Direct, Implicit, and Register addressing
       - (Aa) Explain the Direct, Implicit, and Register addressing.

8. Explain the following arithmetic instruction formats:
   - (a) Various address instruction formats.
   - (b) Explain the following arithmetic instruction using
     - (A) Explain the Direct, Implicit, and Register addressing
       - (Aa) Explain the Direct, Implicit, and Register addressing.

9. Explain the following arithmetic instruction formats:
   - (a) Various address instruction formats.
   - (b) Explain the following arithmetic instruction using
     - (A) Explain the Direct, Implicit, and Register addressing
       - (Aa) Explain the Direct, Implicit, and Register addressing.

8. Explain the following arithmetic instruction formats:
   - (a) Various address instruction formats.
   - (b) Explain the following arithmetic instruction using
     - (A) Explain the Direct, Implicit, and Register addressing
       - (Aa) Explain the Direct, Implicit, and Register addressing.
(e) Find the rank of
\[
\begin{bmatrix}
1 & 1 & 1 \\
1 & 2 & 1 \\
3 & 2 & 3
\end{bmatrix}
\]

BA in skew-Hermilinan.

If A and B are Hadamard matrices show that AB - BA in skew-Hermilinan.

If \( A \) and \( B \) are Hadamard matrices show that
\[
0 = \begin{bmatrix}
1 & 1 & 1 \\
1 & 2 & 1 \\
3 & 2 & 3
\end{bmatrix} - \begin{bmatrix}
2 & 1 & 3 \\
3 & 1 & 2 \\
2 & 1 & 3
\end{bmatrix} \begin{bmatrix}
1 & 2 & 1 \\
1 & 2 & 1 \\
1 & 2 & 1
\end{bmatrix}\]

(f) Find \( x \) and \( y \) such that \( x + y = \begin{bmatrix}
1 & 1 \\
1 & 2 \\
1 & 3
\end{bmatrix} \begin{bmatrix}
1 & 1 \\
2 & 1
\end{bmatrix} \begin{bmatrix}
1 & 1 \\
1 & 2 \\
1 & 3
\end{bmatrix}^{-1} \begin{bmatrix}
1 & 1 \\
2 & 1
\end{bmatrix} \begin{bmatrix}
1 & 1 \\
1 & 2 \\
1 & 3
\end{bmatrix}
\]

(g) Show that the group is abelian.

If every element of a group is its own inverse then the group is abelian.

(h) If \( b \leq d \leq \) and be any elements, then construct the matrix.

(i) Carry equal marks.

Note: Attempt Five questions in all, selecting one question from each Unit. 0.1 is compulsory. All questions carry equal marks from each Unit. 0.1 is compulsory. All questions carry equal marks.

Maximum Marks: 80

Time: Three Hours

BCA-123

MATHEMATICAL FOUNDATION II

1906

BCA/M-18

ROLL NO. 04

F.I. 1.11/9 1-1906

2.200 1-1906

Section IV

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

Also Find \( A^{-1} \).

PROVE THAT THE EIGENVALUES OF A REAL SYMMETRIC MATRIX ARE REAL.

Also find the eigenvector corresponding to any eigenvalue.

Find the eigenvalue of the matrix.

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

(a) Let $S = \{0, 1, 2, 3\}$, and $\oplus$ is binary operation.

(b) $q + a$ is defined by $q \pm a$ is the remainder obtained on dividing $q$ by $a$.

Section II

Show that for all $u \in \mathbb{N}$ the following are logically equivalent:

\[ (b \sim) \land d \land \left[ (b \lor (d \sim)) \sim \right] \sim \]

\[ \frac{1}{u} = \left( \frac{1}{u} \right) + \frac{2}{3} \nu + \frac{3}{2} \nu + \frac{4}{1} \nu + \frac{5}{1} \nu + \frac{6}{1} \nu \]

Section III

Prove that the set of matrices $\left[ \begin{array}{cc} 0 & 1 \\ q & p \end{array} \right]$ under addition and multiplication is a subring.

Define the ideal and field with an example.

There exists a number which is equal to its square.

Section IV

Prove that any solution for this value of $x$ fall to have a unique solution $y$ will the equations $3x - 1 = y \sim z + x + z = y \sim z + x + z = x \sim z$. Find the rank of $\lambda$ with the equation $\left[ \begin{array}{ccc} 1 & 0 & 1 \\ 0 & 2 & 1 \\ 1 & 0 & 1 \end{array} \right] = V^2 - 1 = V^{-1}$ and show that

\[ \left( \begin{array}{c} 0 \\ 1 \\ 0 \end{array} \right) = \left( \begin{array}{c} 1 \\ 2 \\ 3 \end{array} \right) \]

Define adjoint of a matrix. If $A = a_{ij}$

Section V

Prove that the set of matrices $\left[ \begin{array}{cc} 0 & 1 \\ q & p \end{array} \right]$ under addition and multiplication is a subring.

Define the ideal and field with an example.

There exists a number which is equal to its square.
1. What is a word processor? Explain with various text and paragraph formatting.

2. What is a word processor? Explain with various text and paragraph formatting.

3. What is a word processor? Explain with various text and paragraph formatting.

4. What is a word processor? Explain with various text and paragraph formatting.

5. What is a word processor? Explain with various text and paragraph formatting.

6. What is a word processor? Explain with various text and paragraph formatting.

7. What is a word processor? Explain with various text and paragraph formatting.

8. What is a word processor? Explain with various text and paragraph formatting.

9. What is a word processor? Explain with various text and paragraph formatting.

10. What is PageMaker? Explain its various features.


12. What is PageMaker? Explain its various features.


15. What is PageMaker? Explain its various features.


17. What is PageMaker? Explain its various features.

18. What is PageMaker? Explain its various features.


20. What is PageMaker? Explain its various features.


22. What is PageMaker? Explain its various features.

23. What is PageMaker? Explain its various features.

24. What is PageMaker? Explain its various features.

25. What is PageMaker? Explain its various features.


27. What is PageMaker? Explain its various features.


29. What is PageMaker? Explain its various features.

30. What is PageMaker? Explain its various features.

31. What is PageMaker? Explain its various features.

32. What is PageMaker? Explain its various features.

33. What is PageMaker? Explain its various features.

34. What is PageMaker? Explain its various features.

35. What is PageMaker? Explain its various features.

36. What is PageMaker? Explain its various features.

37. What is PageMaker? Explain its various features.

38. What is PageMaker? Explain its various features.


40. What is PageMaker? Explain its various features.

41. What is PageMaker? Explain its various features.

42. What is PageMaker? Explain its various features.

43. What is PageMaker? Explain its various features.

44. What is PageMaker? Explain its various features.

45. What is PageMaker? Explain its various features.

46. What is PageMaker? Explain its various features.

47. What is PageMaker? Explain its various features.

48. What is PageMaker? Explain its various features.

49. What is PageMaker? Explain its various features.

50. What is PageMaker? Explain its various features.
16 (q) S/W Maintenance.

9. Write notes on the following:

16 Why testing is so important? Explain testing techniques.

UNIT II

16 in index sequential file organization. Define file, types of files and explain insertion and deletion.

16 Discuss Cost/Benefit Analysis. Explain difference in logical and physical Design.

UNIT III

16 Explain its functioning.

5. Define DFD, make a DFD for inventory system and

6. (a) Explain DFD. Make a DFD for inventory system and

7. Explain SDLC.

8. Define system characteristics of system and types of

UNIT I

4+4=16

7. Write elements of system.

8. Write a note on a and b) file storage.

9. Differentiate IPO and HIPO charts.

10. Make decision table for a). variable OR Gate.

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

Time: Three hours

Maximum Marks: 80

BCA-125

DESIGN

STRUCTURED SYSTEM ANALYSIS

1908

TOTAL PAGES: 02

ROLL NO.
I. Write a note on the essentials of a good draft.

2. What is the distinction between official and business letters?

3. Write a note on quotations.

4. Explain the meaning of any six of the following:
   - Embezzlement
   - Deed
   - Confinement
   - Bank draft
   - Arbitrary
   - Address report

5. Explain the meaning of any six of the following:
   - Wife
   - Validation
   - Reinurrence
   - Page
   - Indent
   - In lieu of

6. Give the meaning of the term "in lieu of.

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

Time: Three Hours

Maximum Marks: 30
0 = (0) \phi(x) \text{ and } \phi(x) + a_1 x + a_2 x^2 = \frac{\phi''}{\phi'}

2. Use the Taylor's method obtain the approximate value of \( f \) at \( x = 0 \).

2. Find \( \sin(x) + x \) is well condition of root.

2. Establish whether the system 1.01x + 2.02 = 0.

2. (a) Find the interval in which the root of the equation lies.

I. (a) Find the interval in which the root of the equation lies.

Note: Attempt five questions in all, select one question from each unit. One can attempt five questions in all, select one question from each unit.

Maximum Marks: 40

B.Tech. 2021
INFORMATION TECHNOLOGY
MATHEMATICAL FOUNDATIONS OF
B.Tech. M-18

Roh No. ............
Total Pages: 4
2. (a) Given \( \frac{\partial}{\partial \phi} \) where \( \phi = 0 \), when \( \phi = 0 \), \( \frac{\partial}{\partial \phi} \) and find.

\[
\phi = 0 = x \quad \text{when} \quad 0 = \phi \\
\phi = 0 = x \quad \text{when} \quad 0 = x
\]

Then take \( 0 = y \).

(b) Solve the following equations by Gaussian elimination.

\[
\begin{align*}
2x - 2y + 2z &= 27 \\
2x + 2y - 2z &= 18 \\
2x + 2y - 2z &= 17
\end{align*}
\]

(c) Find the real root of \( x^2 - x - 1 = 0 \) by Newton-Raphson method, which is \( 2 \) correct to three places.

(d) Find the cube root of \( 5 \) correct to three places.

(e) Decimal by iterative method.

(f) Decimal by iterative method.

(g) An approximate solution of the system.

(h) Define pivot elements and explain complete pivoting.

(i)BX
(p) Explain the operation of a bidirectional shift register in or out from a register.

(q) Examine how numbers can be extracted from parallel and parallel in parallel.

Unit I

2 MOS RAM

Discuss advantages and disadvantages of dynamic converter

What are the advantages of magnetic memories?

I. (a) Explain the term Conversion Time and accuracy of ADC.

Note: Attempt five questions in all, selecting one question each from Unit II.

Maximum Marks: 40

B.S.T.I-204

DIGITAL ELECTRONICS-II

B.S.T.I/M-18

12382

Roll No. 03

Total Pages: 03
Unit III

5. (a) **DAC**
   Describe the successive approximation method for
   scale output. Find the output voltage for an input of
   a six bit resistor divider network has 10 volts full
   DAC and discuss its limitations.

   (b) 11110.

Unit II

4. (a) **Timing diagram**
   Explain the operation of a 4-bit ring counter with
   shift registers.

3. (a) 4-bit serial in-serial out
   Explain the operation of a 4-bit ring counter with
   shift registers.

Unit I

8. Describe various magnetic surface storage devices in brief.

7. (a) **ROM**
   Explain the operation of a ROM, single ROM memory
   of whose matrix ROM.

6. (a) **EPROM**
   Explain the following terms relating to memory

5. (a) **EPROM**
   Write notes on the following:
   2+2=4
   Memory cycle time.
   Write time of memory.
   Access time of memory.
   Memory address register

4. What is a content addressable memory?
   Explain the operation of a content addressable memory. Explain the
   advantages and disadvantages.

3. Explain the organization of a RAM memory.

2. Describe various magnetic surface storage devices in brief.

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   Define Read only memory: Explain the organization

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