Had you been as wise as bold,
Childed hopes do women entwine:
But my outside is beheld:
Many a man his life hath sold:
Often have you heard that told
All that glitter is not gold.

To Cato's daughter, Brunius Pontius,
Her name is Pontia, nothing under valued:
I did receive her speechless messengers
Of wondrous witnes: sometimes from her eyes
And she is fair, and fairer than that word,
In Belmon is a lady truly fair.

I have made the following extracts:

I. Explain with reference to the context any one of the

Note: All questions are compulsory.

Maximum Marks: 40

Time: Three Hours

ENGLISH

1991

GSO-M-18

Roll No. 04

Total Pages: 04
should be under the necessity of executing themselves. In
would be nothing achieved. It is well, therefore, that men
If there were nothing so strenuous or complex for the
If there were no difficulties, there would be no success.
Success grows out of struggles to overcome difficulties.

8. Attempt a piece of the given passage and assign a suitable

9. Write a short note on any one term:

7.

8. Write a short note on any one term:

6. Write one word substitution of any given expressions:

5. Write a letter to the Chairperson of your Municipal

4. Write a letter to the Minister of Health of your state for

3. Answer any three questions in about 30 words each:

2. Explain any two of the given terms:

1. Write a letter to the Chairperson regarding the insanity conditions in your

10. Diagnostic centres.

College and Hospital. As patients have to go to private
appointing a radiologist in the Kampala Chemo Medical

Shakespeare in the play

(ii) Analyse the portrayal of female characters by

(i) Attempt the character sketch of Portia

(i) Why does Bassanio need money from Antonio?

(ii) What is there in the caskets?

(iii) What kind of a leader is Shylock?

(iv) Why did Portia and Hennessy appear in the court

(v) Who is Antonio?

(iv) Who is Antonio?

(iii) Three-Comedy (TV) Audience

(ii) Teleplay (TV)

(i) Plot

(v) Explain any four of the given terms:

(vi) Explain any four of the given terms:
Attempt any four questions in about 150 words each.

1. Explain with reference to the context:

Note: Attempt all questions.

Maximum Marks: 80

Time: Three Hours

Paper: II

ENGLISH (Compulsory)

1992

GSOM-18

Total Pages: 03

Roll No. 03
(b) How does Macbeth get the title of the Thane of Cawdor?
(c) How does Lady Macbeth incite her husband to murder king Duncan?
(d) Describe briefly the Banquet scene.
(e) Attempt a brief character sketch of Malcolm.
(f) Comment on the role of three witches in the play ‘Macbeth’.

3. Attempt a character sketch of Macbeth.

Or

Comment on the dramatic significance of the opening scene in ‘Macbeth’. 10

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

(a) Women Empowerment
(b) Science and Religion
(c) Menace of Ragging
(d) Population Explosion.

5. Translate into English:

Your purse has been stolen and you go to the police station to lodge a complaint. Write down the conversation between you and the police inspector.

Or

In lieu of translation for Foreign students only:
(a) Beauties of Nature
(b) Evils of Dowry System
(c) An Ideal Teacher

6. (a) Give one word for the following. Do any five:
(i) A place where bees are kept.
(ii) The head of a corporation.
(iii) A person who writes books.
(iv) One who shoots with bows and arrows.
(v) A person who pretends to be what he is not.
(vi) One who dies for a noble cause.
(vii) A person who believes in God

(b) Develop a dialogue-based paragraph of about 200 exchanges on the situations given below:
Two friends meet at a wedding party. Write a brief conversation between them.
1. የምህርት ቀን በወጪ-ቁጥር በወጪ ከወጪ (ሸ)
2. የምህርት ቀን በወጪ-ቁጥር በወጪ ከወጪ (ሸ)
3. የምህርት ቀን በወጪ-ቁጥር በወጪ ከወጪ (ሸ)

2×6=12

ናርስ ከጭት የሚጭር በሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለው ከሚለwald
6. \(1 \times 10 = 10\)

7. \(2 \times 3 = 6\)

8. \(2 \times 5 = 10\)
P.U.O. 699

(2.00/22)1-1999

Punjabi (Elective)
PUNJABI

1999

GSO/M-18

Roll No.

Total Pages: 05

Maximum Marks: 80

Time: Three Hours
2. \( 5 \times 2 = 10 \)

3. \( 8 \times 2 = 16 \)

[Maximum Marks: 80]

Time: Three Hours

Sanskrit Elective

1703

GS4/M-18

Roll No. 03

Total Pages: 03
I. $I \times 3 = 3 \times I = 3$ 

II. $I \times I = 1 \times 1 = 1$ 

III. $I \times 2 = 2 \times I = 2$ 

IV. $I \times 10 = 10 \times I = 10$ 

V. $I \times 8 = 8 \times I = 8$ 

VI. $I \times 6 = 6 \times I = 6$ 

VII. $I \times 4 = 4 \times I = 4$ 

VIII. $I \times 2 = 2 \times I = 2$ 

IX. $I \times 1 = 1 \times I = 1$ 

X. $I \times 0 = 0 \times I = 0$ 

XI. $I \times 3 = 3 \times I = 3$ 

XII. $I \times 1 = 1 \times I = 1$ 

XIII. $I \times 2 = 2 \times I = 2$ 

XIV. $I \times 10 = 10 \times I = 10$ 

XV. $I \times 8 = 8 \times I = 8$ 

XVI. $I \times 6 = 6 \times I = 6$ 

XVII. $I \times 4 = 4 \times I = 4$ 

XVIII. $I \times 2 = 2 \times I = 2$ 

XIX. $I \times 1 = 1 \times I = 1$ 

XX. $I \times 0 = 0 \times I = 0$ 

XXI. $I \times 3 = 3 \times I = 3$ 

XXII. $I \times 1 = 1 \times I = 1$ 

XXIII. $I \times 2 = 2 \times I = 2$ 

XXIV. $I \times 10 = 10 \times I = 10$ 

XXV. $I \times 8 = 8 \times I = 8$ 

XXVI. $I \times 6 = 6 \times I = 6$ 

XXVII. $I \times 4 = 4 \times I = 4$ 

XXVIII. $I \times 2 = 2 \times I = 2$ 

XXIX. $I \times 1 = 1 \times I = 1$ 

XXX. $I \times 0 = 0 \times I = 0$
I. Choose the correct answer from the multiple choice

Compulsory Question (40 marks)

Note: Attempt five questions in all. Q. 01 is compulsory.

Modern World
Option I
HISTORY

GSM-M-18

Total Pages: 05

Roll No. 05
When was the International African Association established?

- 1881 (a)
- 1882 (b)
- 1883 (c)
- 1884 (d)

Modern capitalism was written by:

- Adam Smith (a)
- Thomas Malthus (b)
- David Ricardo (c)

The reformation was started in Germany by:

- Heinrich von Keim (a)
- Melancthon (b)
- Martin Luther (c)

Which famous painter's creation is Mona Lisa?

- Leonardo da Vinci (a)
- Rembrandt (b)
- Raphael (c)
UNIT I

1. Write a paragraph explaining the cause of World War I. Include factors such as alliances, nationalism, and imperialism.

2. Discuss the impact of technological advancements on World War I. Include examples of how technology influenced the war's outcome.

UNIT II

3. Examine the causes of the French Revolution. Include political, social, and economic factors.

4. Describe the social, economic, religious, and intellectual causes of the French Revolution.

UNIT III

5. Discuss the results of the First World War. Include events such as the Treaty of Versailles and the League of Nations.


UNIT IV

7. When were the factors responsible for the rise of Fascism?
I. Fill in the blanks with appropriate words: 8×2=16

II. The basic cause of pollution is (1) ____________________________

III. The land development banks provide (2) ____________________________

IV. Political forces, Economic forces

(3) ____________ can change the nature of (4) ____________________________

V. All questions carry equal marks.

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

Maximum Marks: 80

Time: Three Hours

Sectional Aspects of Indian Economy

ECONOMICS

GS/M-18

Total Pages: 05
2. Which of the following is the cause of slow progress of land reforms in India?

(a) Incomplete land records
(b) Excessive litigation
(c) Lack of political will
(d) All of the above

Choose the correct alternative:

(1) (b)
(2) (d)
(3) (a)
(4) (c)

Which of the following statements are true or false?

(b) Land reforms have not benefited Indian farmers
(c) Indian economy is a socialist economy
(d) In India, green revolution started in 1967-68
6. Explain the advantages and disadvantages of WTO for India.

Unit III (§ 172)

1. What are the main problems of college and small scale development in India? Give suggestions for their rapid industrialisation.

8. When are the main causes of adverse sex ratio in India?

8+8 What are the main components of fiscal policy? Describe the weaknesses of fiscal policy of government of India.

9. When are the main causes of adverse sex ratio in Harian?

Lecture VI (§ 172)

1. What do you mean by Balance of Payments?

7. Describe the causes of adverse balance of payments of India.

12+16 agricultural independence.
1. Write down the advantages of internal training

2. Elucidate the offices of social behaviour on the

1. Clarify the meaning of socialization. Does regular

Unit I (Eng) 1

1. Explain the meaning of intrinsic motivation.

Note: Attempt the questions in all sections one question each

Maximum Marks: 60

Time: Three Hours

HEALTH AND PHYSICAL EDUCATION

GS0/M-18

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

TOTAL PAGES: 04
8. Explain the structure of various organs of digestive system in detail.

9. Define motivation. How is motivation helpful in learning sports activity?

10. Explain the Newton's law of motion. Are these laws applicable in games and sports? Clarify.

6. Explain why motivation helps in sports and games?

5. What is Sports Biomechanics? Is Biomechanics helpful for enhancing apex performance in sports and games?

4. What do you mean by Dopamine? Explain the types of Dopamine in detail.

Give the notation of Show Key of any Key with one

Section A

Time: Three Hours

Paper I (Theory)

Music Vocat

1722

GSO/M-16

Total Pages: 03
7. Write in detail about voice culture.

8. Give the historical study of Indian Music from 17th to 19th century.

Section D (8.30-8.35)

3. Write down Tumari and Shapla with Dugga, Tanam, and
Chowtan Lakhunes.

4. Give the notation of Raga Deshika for Easy Khruud with
two Aroha and two Tala.

5. Give short introduction of Raga Behr and Raga Miyavan.

6. Give the detailed historical study of Indian Music from
18th to 19th century.

7. Give in detail about the classification of instruments during
the medieval period and modern period.

8. Give the contributions towards Indian Music by Krishan
Rao Shankar Pandit.

9. What do you know about Folk-Music? Write down
Section C (8.20-8.25, 8.30-8.35)

10. Give in detail about the classification of instruments during
the medieval period and modern period.
2. Write the comparative study of the following Rains: 4:4-8

8

Note: All questions carry equal marks.

Time: Three Hours
Maximun Marks: 40

THEORY
MUSIC INSTRUMENTAL

ROLL NO. 03
TOTAL PAGES: 03

1724
GSO/M-18
1. Write the contribution of Ustad Ali Akbar Khan in detail.
2. Write the contribution of Ustad Vilayat Khan in detail.
3. Write the notation of Rashahimi Carnatic Bahr with detail.
4. Write the notation system. Explain its merits and demerits.
5. Write the historical development of Carnatic Bahr with description.
6. Write the Lenn, Deen, Chagnun in Bahr and during the 19th to 18th century.
7. Write the development of Indian classical music in detail.
8. Write the contribution of Ustad Vilayat Khan in detail.
9. Write the historical development of Ragas Bahr with description.
10. Write the contribution of Ustad Ali Akbar Khan in detail.
GSA/M-18

1725

TOTAL PAGES: 03
6. Write in detail on development of Indian classical music.

5. Write the merits and demerits of notation system.

Unit B (प्रारंभिक)

4. Give a full detail of a Raga from prescribed your syllabus with Thaal and Tilton Laya.

3. Write the notation of Melakarta Carnatic in Raga Bhimpalil.

2. Write your own words about any two players who were born during 17th to 19th century.

1. Write about the life and contribution towards music of Abdul Vaiqar Khan.

10. What is the role of electronic media in popularising Indian classical music? Describe in detail.
1. Attempt any five questions.

Maximum Marks: 80

Time: Three Hours

Computer Applications in Office Management

OFFICE MANAGEMENT

1973

GSO/M-18

Total Pages: 03
5. Explain the concept of Online Data Processing in detail.

6. What is Database Management System? Also explain with suitable example.

7. What is Topology? Also explain different network topologies in detail.

8. How can we create a Table in Word Processing?

9. Which is Multimedia? Which are the components used for Application Software (System Software)?

10. Explain the following terms:

   - Field
   - Primary Key
   - Master Key

11. Define Macro. Explain the steps to create Macro in Word Processing.

12. Define Operating System and also explain its types and uses.

13. List the topologies that are used in computer networking.

14. Explain the significance of different topologies and their applications.


16. Describe the advantages and disadvantages of each topology.
Unit II (Question II)

2. Basic features of UK Constitution

3. Explain the features of US Constitution

Unit I (Question I)

1. What is the justification on monarchy in UK.

Option (i)

UK vs USA

Comparative Constitutions

GSD/M-12

Total Pages: 03

Note: Attempt Five questions in all selecting at least one question from each Unit. Q. No. 9 is compulsory.
2. Write short notes on the following:

(i) Two merits of Decentral Legislation

(ii) Two functions of bureaucracy

(iii) Name of main two Political Parties of U.K.

(iv) First President of U.S.A.

2 x 8 = 16

Univ. A (1969)

7. Explain the Electoral Process in U.K.

8. What is the voting behaviour in U.S.A.

9. Write short notes on the following:

(iii) 

(iv) 

(vi) 

(vii) 

(viii) 

Univ. B (1969)

6. Explain the Political Parties in U.S.A.

5. Describe the role of pressure groups in U.K.

Univ. III (1969)

4. American Senate is the most powerful second chamber
Lord Salisbury of England is not only the Second Chamber Senate.

Despite the organisation and powers of the American


Main Features of UK & USA Constitution.

Note: Answer any five questions.

Maximum Marks: 80

Time: Three Hours

Comparative Constitution of UK & USA.

Paper: 1 (Option 1)

POLITICAL SCIENCE

GSOM-18

ROLL NO.

TOTAL PAGES: 04
5. Comparison between the powers of British PM with America President

6. What is the voting behaviour in England and America?

7. What is the main role of the PM in the UK?

8+8 1. What do you mean by Pressure Groups in UK?

9. Objective Type Questions

9.1. Which is the main role of the Senate in the USA?

9.2. What type of government system is America?

9.3. Which is the main role of the President in America?

9.4. How many years does a President serve in America?

9.5. What is the main role of the Senate in America?

9.6. Which is the main role of the House of Commons in England?

9.7. How many years does a British PM serve?

9.8. What is the main role of the House of Commons in England?

9.9. What is the main role of the House of Lords in England?

9.10. How many years does a British PM serve?

(vi) Party System in England

10.0. Which is the main role of the Speaker in England?

10.1. Which is the main role of the Prime Minister in England?

10.2. Which is the main role of the King in England?

10.3. Which is the main role of the House of Commons in England?

10.4. Which is the main role of the House of Lords in England?

10.5. Which is the main role of the Chester Constitution?
\[
\frac{1 + z}{1 + z} = W
\]

Transformation

(d) Find the fixed points of the function \( w = \exp(z) \) and classify them.

(f) Find \( \Re \) such that the function

\[
\phi(x, y) = \int_{-\infty}^{\infty} \int_{-\infty}^{\infty} \frac{e^{-r^2}}{r^2} dr \, dx
\]

is mapped by the region

(e) Find the region of the \( w \)-plane into which the region

\[
\frac{1}{1 - z} = w
\]

is mapped by the region

(f) Find the fixed points of the function \( w = \exp(z) \) and classify them.

Section 13

(a) Find the range of \( z \) and the range of \( w \).

(b) Show that the cross-ratio remains invariant under the transformation

\[
\frac{1 - z}{1 + z} = w
\]

(c) Find the range of \( z \) and the range of \( w \).

(d) Find the fixed points of the function \( w = \exp(z) \) and classify them.

(e) Find the region of the \( w \)-plane into which the region

\[
\frac{1}{1 - z} = w
\]

is mapped by the region

(f) Find the fixed points of the function \( w = \exp(z) \) and classify them.

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

Maximum Marks: 20

Time: Three Hours

BM-361

REAL AND COMPLEX ANALYSIS

GSO/M-18

Total Pages: 01
Section II

4. A function $f(x)$ is differentiable if

$$f'(x) + (f'(x)(x) = (z)$$

5. Find the half-range cosine series for $f(x)$.

$$\sum_{n=1}^{\infty} a_n \cos \left(\frac{n\pi x}{a}\right)$$

6. Prove that

$$\int_{-a}^{a} \frac{f(x)}{x} dx$$

Section III

7. Prove the following:

$$\frac{d}{dx} \left[ \frac{1}{x} \right] = -\frac{1}{x^2}$$

8. Evaluate the region $R$ where $R$ is the region bounded by

$$\int_{-\infty}^{\infty} e^{-x^2} dx$$
2. (a) If \( W_1 \) and \( W_2 \) are two subspaces of a finite dimensional vector space \( V \), then \( \dim(W_1 + W_2) \) may be less than \( \dim(W_1) + \dim(W_2) \). Show why.

(b) \( \dim(V)^2 \geq \dim(W_1) \cdot \dim(W_2) \) for any finite dimensional vector space \( V \) and subspaces \( W_1 \) and \( W_2 \) of \( V \). How does this relate to the inner product space \( V \)?

(c) If \( \{x_1, x_2, \ldots, x_n\} \) is a linearly independent set, then \( \dim(\text{span}\{x_1, x_2, \ldots, x_n\}) = n \).

(d) If \( S \) is a finite set, then \( \dim(\text{span}(S)) \leq |S| \).

(e) Define the self-adjoint operator \( A \) on \( \mathbb{R}^2 \). Show that the transformation \( T : \mathbb{R}^2 \to \mathbb{R}^2 \) defined by \( T(x, y) = (x, y) \) is linear and is one-one.

(f) If \( (x_1, x_2, \ldots, x_n) \) is linearly independent, then \( \dim(\text{span}(x_1, x_2, \ldots, x_n)) = n \).

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

Maximum Marks: 26

Time: Three Hours

BMA 302
LINEAR ALGEBRA
1745

[Student Name]
[Student ID]

Problem No. 18 Total Pages: 64
Línia I

Línia II

Línia III
\[
\left( \frac{dp}{d\theta} \right) = - \frac{z'}{\theta^2 p}
\]

Always zero. Hence that:

a way that his acceleration towards the origin is in such a circle moves along a circle in such a way that its acceleration towards the origin is zero. Hence, it moves in a circle.

1. \text{Define } \frac{dp}{d\theta} \text{ and } \text{along distances.}

2. \text{The time of flight and horizontal range of a projectile.}

3. \text{Find the motion force that will move a mass of \( \text{kg} \) from rest through 1 meter in 1 second.}

4. \text{State and prove Newton's second law of motion.}

5. \text{Define Radial and Transverse Velocity.}

\text{Complementary Questions:}

- Question from each list. No. 1 is compulsory.
- Answer the questions in all sections at least one.

\text{Note: Maximum Marks: 27} \hspace{1cm} \text{Time: Three Hours} \hspace{1cm} \text{Total Pages: 04}

\text{Maximum Marks: 36}

\text{Dynamics 1974}

8. \text{Find the differential equation of central orbit in the plane of central force with variable } a.

\text{If } a \text{ a particle is projected from an angle at a central point from an infinite distance, it}

\text{corresponding time of flight, show that } R = \frac{a^2}{1 - \frac{a^2}{e^2}}.

9. \text{A particle moves on a smooth sphere under no pressure except the surface. Show that no force acts on the particle.}

\text{From the fixed point find the origin of the particle moves in a plane under a central force where with variable } d, \text{ the square of the distance which varies inversely as the square of the distance.}

\text{A particle moves in a plane under a central force.}

\text{A particle moves on a circle with radius } R \text{ as the origin is at zero.}

\text{A particle moves along a circle in such a way that its acceleration towards the origin is zero. Hence, it moves in a circle.}
24

24

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24
\[ z = 0 \]

**Transformation**

Find the inversion points of the Mobius function:

\[ z = (x)f \]

Find the Fourier coefficient of the function:

\[ \phi \cdot \phi (x) f \]

Change the order of integration of:

\[ \int \int \int \]

Evaluate:

Evaluate the Fourier transform of:

\[ \int \int \int \]

**Complex Conjugate**

Find the conjugate of a complex number.

**Note:** Answer the questions in all sections at least one day in advance.

**Section IV**

Prove that an analytic function with constant modulus is constant.

\[ \{z + i\}(z - x) = z - n \]

If analytic and harmonic, then such an analytic function of \( z \) is given by:

\[ az^n = (z)^n \]

Show that the transformation maps a circle into the unit circle.

\[ \frac{1+z}{1+2z} \]

Find the image of region inside and outside the unit circle.

Hence find the image of \( z \) where \( |z| > 1 \).

Points on the boundary of the circle in \( Z \)-plane pass through the origin in \( Z \)-plane to a circle in \( W \)-plane of a straight line.

Show that the transformation maps a circle into a circle.

**TOTAL PAGES:** 4

**REAL AND COMPLEX ANALYSIS**

**1763**

**C85 M18**

**ROLL NO.: 04**

**TOTAL MARKS:** 100

**TIME: THREE HOURS**

**IN-361**
Section I

1. Find the Fourier series expansion of the function \( f(x) = \frac{1}{2} \) for \( -\pi < x < \pi \).

2. Prove that the following functions are not dependent:
   \[ z \alpha x + \alpha x \log x = \lambda ; z \alpha x + \alpha x \log x + \alpha \theta = \mu \]

Section II

3. Evaluate the integral:
   \[ \int_{-\infty}^{\infty} \frac{x^{n+1}}{e^{x} - 1} \, dx \]

Section III

4. Show that the function
   \[ f(x) = \frac{1}{1 + x^2} \]
   is continuous and that its Cauchy conditions are satisfied.

5. Obtain the Fourier series for the function
   \[ f(x) = \begin{cases} 1 & \text{if } 0 < x < 1 \\ 0 & \text{otherwise} \end{cases} \]

6. (a) Find the Fourier series expansion of the function
   \[ f(x) = \begin{cases} 0 & \text{if } 0 < x < 1 \\ 1 & \text{if } 0 < x < 1 \end{cases} \]
and scalar multiplication.

Subspace of \( \mathbb{W} \) is that \( \mathbb{W} \) is closed under addition of \( \mathbb{W} \) and \( \mathbb{W} \) is a vector space \( (\mathbb{W}, +) \) to be a

2. (a) A necessary and sufficient condition for a non-

### Problem I

I. Define orthogonal complement of a subspace \( \mathbb{W} \)

1. Find the norm of the vector \( \mathbb{V} = (2, -3, 4) \)

2. Normalize this vector.

3. Find the nullity of the matrix

4. Show that the null space of \( \mathbb{V} \) is a basis for \( \mathbb{W} \).

5. Find the union of two subspaces of a vector space \( \mathbb{W} \).

### Supplementary Question

From each unit (D) of \( \mathbb{W} \), \( \mathbb{W} \) is contraposed.

Note: Answer five questions in all selecting one question.

Maximum Marks: 40

Time: Three Hours

BM-32

LINEAR ALGEBRA

174

GSO/M-18

9. (a) Let \( \mathbb{W} \) be a linear operator on a finite-dimensional inner product space \( \mathbb{W} \).

Let \( \mathbb{W} \) be a linear functional on a finite-dimensional inner product space \( \mathbb{W} \).

If \( \{ \mathbb{V} \} \) is an orthonormal basis of an
8. (a) Let $W$ be a subspace of an inner product space $V$. Show that the transformation $T: W \rightarrow \mathbb{R}$ defined by $T(x) = x^T W x$ is a linear transformation whose range space is spanned by the vectors $\{1, 2, 3\}$, and $W$ is a basis of $W$. Then $U \subseteq W$ if and only if $T(U) \subseteq \mathbb{R}$.

II

Let $I$ be a linear transformation$\mathbb{R}^2 \rightarrow \mathbb{R}^2$ such that $I^2 = I$. Find the linear transformation $T: \mathbb{R}^2 \rightarrow \mathbb{R}^2$ such that $T(x) = x^T W x$. Then $V$ is a subspace of a vector space $V$ and the set $S$ is linearly independent.

Also, the eigen space of $A$ is the kernel of $T - I$. Also, the eigen value of $I - T$ is singular. Find the change of basis matrix (transition matrix) using a change of basis matrix (transition matrix) $\{(1, 1), (1, 0), (1, 0), (1, 1)\}$ to basis $\{(1, 1), (1, 0), (1, 0), (1, 1)\}$. Find the standard basis is relative to the standard basis $\{(1, 1), (1, 0), (1, 0), (1, 1)\}$.
4

\[ V \log_{10} \left( \frac{1 + \cos \theta}{1 - \cos \theta} \right) \]

the direction of motion. Given by

throughout the motion, the angle \( \theta \) through which

a particle describes a plane curve be constant.

Prove that if tangential and normal acceleration of

\( \theta \) varies as the fifth power of sec \( \theta \).

is always zero. Show that the transverse acceleration

such a way that its acceleration is towards the origin

A particle is moving along a circle \( r = a \sin \theta \) is

Until

question from each unit. No. 9 is compulsory.

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

Maximum Marks : 40

Time : Three Hours

BM-36

DYNAMICS

GSD-M-18

I76S

Roll No. : 09

Total Pages : 05

PMO
the initial velocity of the projectile must not be less than the height if it is taken in order to shell it.

The angular elevation of an enemy's position on a hill is 60 degrees. How far apart were the two good rescuers? Show that if another held man at a height of 30° to the horizon with a speed of 4 meters per second, then the shortest time from rest to rest in which a steady load p tons can hit a weight W tons can be a weight 

I

by the same oh

through 1 m in wind, find the average force exerted from rest and is then brought to rest after experiencing a mass of 10 kg is full height a distance of 10 m

that average H. P. at which the engine has worked is acceleration in metres per second squared. Show if starting from rest and moving with uniform acceleration when their angular distance apart is acceleration when their angular distance apart is and 2 radian per see. Obtain their relative velocity and 2 radian per see. Obtain their relative velocity with constant angular velocities of 4 radian per see. centric circles of radius 2 m and 8 m respectively.

A locomotive engine draws a load of 150 hp at an inclination 4. (a) 4.

2. (a) Two particles A and B are moving along the co-
Define Central Force and Central Orbit.
SWM. is 2 and its period is 2.
Find the amplitude.
The maximum velocity of a body moving with curve with uniform speed is \( \frac{dp}{dt} \).
Prove that acceleration of a point moving in a curve is
\( \text{(Compulsory Question)} \).

\[ f = \frac{1}{2} \left( \frac{1}{c} - \frac{1}{a} \right) \frac{f^2}{\alpha} \]

\[ f = \frac{1}{2} \left( \frac{1}{c} - \frac{1}{a} \right) \frac{f^2}{\alpha} \]

Prove that the time taken by earth to travel half its elliptic path of a plane, then prove that the ellipse which has a vertex closer to the center is
\( \text{(Compulsory Question)} \).

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Prove that the time taken by earth to travel half its elliptic path of a plane, then prove that the ellipse which has a vertex closer to the center is
\( \text{(Compulsory Question)} \).
2. (a) Explain crystalline and glassy materials. Write their

Lithium

2. (d) State the principle of scanning electron microscope

Superconductors

2. (e) Differentiate between type I and type II

2. (f) Define the concept of X-ray diffraction

2. (g) Determine the spacing between (111) and (100) planes.

1. (a) Lattice constant of a cubic lattice is $a$. Determine
calculation is allowed.

questions carry equal marks. Non-proportionable
question from each unit. Q. No. 1 is compulsory. All
Note: Attempt five questions in all, selecting at least one

Time: Three Hours

Maximum Marks: 40

Solid State and Nanophysics

Paper XI

PHYSICS

1770

G50/M-18

Total Pages: 03

Roll No. 03
UNIT I

Superconductors

Discuss the applications and limitations of the
Josephson effect. What is Josephson effect? Describe de, and e:

a superconductor

Length reduces due to the presence of impurities in
Explain Pippard's theory. Prove that the coherence
and since of zero resistivity are mutually independent
Explain Meissner effect. Prove that Meissner effect

UNIT III

2 X-rays:

occurs at an angle of 90°. Find the wavelength of
2.8 x 10^-10 m. The first order Bragg's reflection
The spacing between the planes of NaCl crystal is
Explain the concept of K-space.

the size of the cube.

cubic lattice with lattice constant a, where a is
and show that the reciprocal lattice is itself a simple
While the reciprocal lattice to a simple cubic lattice
method used in X-ray diffraction.

Describe the rotating crystal method and powder
Vectors.

the primitive translation vectors of the reciprocal
Explain reciprocal lattice. Describe the expression for

UNIT II

Loose Packing Structure.

Explain diamond structure and show that it is having
applicable to a three dimensional lattice.

Describe the principle of symmetry operations.

What do you mean by symmetry operations?

the a, b, and c axes at 90°, 2θ and 3θ.

Find the Miller indices for a plane which intersects
solids.

Difference between amorphous and crystalline
two-dimensional lattice.

(2) When do you mean by a lattice, basis, unit cell and

(a) primitive cell? Discuss the Bravais lattices for a

(b) Miller indices of a plane. What is Miller indices of a plane? What are Miller indices of a plane?

(c) What are superconductors? What is superconductors?

(d) What are carbon molecules? Explain.

(e) Applications.

(f) What is Wigner-Seitz primitive cell? What is Wigner-Seitz primitive cell?
3. Discuss critically magnetic field in type I and type II superconductors.

6. (a) Explain London theory in context of superconductivity. Derive the expressions for London penetration perpendicular to the plane (Hkl).

(b) Prove that in a cubic crystal the direction \( [HKL] \) is perpendicular to the reciprocal lattice of a face if \( H/L = 1 \).

(c) What do you mean by reciprocal lattice? Show that \( P = 2 \pi \sqrt{A^2 + B^2} \) on the cube face of a rock salt crystal. Given \( A = 0.7 \, \text{A} \) to 1.3 \, \text{A} \, \text{will} be selected. When incident at 0.2 \, \text{A} to 1.0 \, \text{A} \, \text{will be rejected. When wavelength in a beam coming through the range determined by X-ray direction.}

(d) Describe the various methods for crystal structure determination by X-ray diffraction.

Unit II

4. \( \text{W}\text{hich are the fundamental concepts of Nano-technology? Discuss the various applications of Nano-technology in the field of Nano-technology?} \)

5. \( \text{What is molecular assembly? Explain the nano-scale and its importance.} \)

6. \( \text{Give the definition of Nano-technology. Discuss the various characteristics of the cube crystalline (cubic unit cell). Discuss crystallography. Loose packing is packing fraction and show that it has a} \)

7. \( \text{Explain the crystal structure of diamond, calculate} \)

8. (a) Explain the London theory in context of superconductivity. Derive the expressions for London penetration perpendicular to the plane (Hkl).
Theory

1. What are the major drawbacks of old quantum theory?
2. Give important applications of Raman effect.

Short answer

3. Distinguish between weak field and strong field.
4. Then the binding energy of an atom.
5. Can a hydrogen atom absorb photon energy greater than that?
Unit III

1. Explain quantization of vibrational and rovrotional

2. Discuss the following:

3. Discuss the theory of spin orbit interaction and

4. What is Zeeman Effect? Explain splitting of D1

5. What are Pauli's exclusion principle? Calculate the

6. Explain spin-orbit coupling for an electron and for system

7. Write Pauli's exclusion principle. Calculate the

8. Discuss the effect of nuclear motion on the spectra

Unit IV

1. Obtain the spectrum terms of two equivalent

2. Find the values of \( S \) and \( J \) for terms \( {1^1S} \)

3. Multiplicity of terms.

4. Term value

5. Quantum states of atomic electrons

6. Discuss the following:

Unit V

1. Find the energy gained by hydrogen atom. An electron is made to collide with a hydrogen atom in its ground state and excites it to \( n = 3 \)

2. Discuss the significance of magnetic quantum

3. What do you understand by space quantization?

4. Explain the significance of magnetic quantum of hydrogen like atom.

5. Prove that velocity of hydrogen atom in its Bohr's orbit is close to \( 1/137 \) times the velocity of light.

6. Discuss the effect of nuclear motion on the spectra
Phosphates

(viii) Discuss oxidation states of N, and P in

(viii) What is a phosphorus ligand?

(vii) Name the first noble octahion complex.

(vi) What is function of Pernith?

Homogalmin

(iv) How many ion groups are present in a molecule of

(iii) Write conjugate base of [HA\n2\nO\n8\n4\n]+ ion.

(iii) What is conjugate acid of CH\n3\nCOOH?

and 4-iodoe

(ii) Which is stronger base between 2-methylpyridine

Note: Attempt five questions in each section at least two

Maximum Marks: 32

Time: Three Hours

PAPER XIII

INORGANIC CHEMISTRY

1774

CH-304

G5A/M-18

ROLL NO. 02

TOTAL PAGES: 03
Section A

2. Explain the following reactions:

- \( CO_2^{(g)} + H_2O \rightleftharpoons H^+ + HSO_3^- \)
- \( AN^- + H^+ \rightleftharpoons NH_2^- \)
- \( Fe^{3+} + (CH_3)_2MgBr \)

3. Complete the following reactions:

5. Discuss the applications of covalent compounds.

- When are Lewis acids and bases important?
- When are metal alkyl compounds used?
- Classify the following metal ions into hard and soft acids:
  - Ti^{4+}, Pd^{2+}, Au^{+}, I^-,
  - Cu^{2+}, Li^+,
  - C^{2-}, Na^+ and H^+.

Section B

2. Discuss the biological role of Ca^{2+} ion.

3. Discuss silicone fluids and their applications.

4. Give the physiology of haemoglobin.

5. Explain bonding in haemoglobin.

6. When is importance of Na-K pump?
I. Give any two methods of preparation of metal.

II. Define EAN rule. Calculate EAN of iron in with difference.

(a) Discuss the bonding in organolithium compounds.
   (i) Bis(n-cyclopentadienyli)hydridolithium
   (ii) n-Allyl) n-ethynylcobalt
   (iii) bis(phenacetonitrile) manganese

(b) Write down formula of the following:

Sec. A

Questions from each section

Note: Attempt five questions in all sections at least two

Maximum Marks: 27

Time: Three Hours

Inorganic Chemistry
CH-304
Paper: XHH
CHEMISTRY
1775
GSC/M-18

Roll No. 03
Total Pages: 03
(c) Explain difference between siloxanes and silicone elastomers.

(b) Why do polyphosphazene chains prefer cyclic structures?

(a) Why do polyphosphazene chains prefer cis-trans conformation?

(b) Which are metalloporphyrins? Which are essential elements?

(c) Sodium pump is electrogenic in nature. Comment.

(b) Porphyrin head and metal ion is coordinated with conditions that a metal ion is coordinated with.

(c) What are metalloporphyrins? What are essential elements.

Section B

(b) Why is HCl less acidic than HClO? Explain.

(a) HCl is more acidic than HClO. Explain.

(a) Why are any applications of HSAB principle?

(c) CH₃COOH + SO₃⁻ → H⁺ + CH₃COO⁻ + SO₄²⁻

(f) CH₃COOH + HO⁻ → H⁺ + CH₃COO⁻ + OH⁻

(c) Comment on feasibility of the following reaction:

1. Acid HCl has weak conjugate base.

(b) Define conjugate acid-base pair. Show that strong

2. When is Lewis concept of acids and bases used?

(a) Give three applications of organo aluminum compounds.

(c) What is Lewis concept of acidic and basic properties?

(b) What do you understand by p-bonding in metal complexes?

(a) Discuss bonding in metal-olefin complexes.
1. Define Osmostic Pressure.
2. Which is Equation of State for a System in a Saturated Solution?
3. What is the significance of Partition Function of a Component Question?
4. How can you justify that Osmostic Pressure is a Colligative Property?
5. Where is molality of the solution, $m = \frac{\text{mass}}{\text{mass} + \text{diluent}}$.
6. Derive the thermodynamically the relation:
7. State and explain Raoult's Law.
8. Calculate the molecular weight of the substance. The molar mass of the substance is 0.526 g/mol. The density of the substance is 0.984 g/cm$^3$. Calculate the osmotic pressure of 2 mol of a substance dissolved in 100 g of water.
9. How many number of Phases and Components are present in the following systems:
10. Choose do not have the same boiling point.
11. Explain why chloroform solutions of KCl and

\[
\text{CH}_3\text{CH}_2\text{CH}_2\text{CH}_3
\]

are not ideal.

**Note:** Attempt five questions in all sections at least two components are allowed.

**Maximum Marks:** 32

**Time:** Three Hours

**Theory:** CH-305

**Paper XIX**

**PHYSICAL CHEMISTRY**

**GSOM-18**

**Roll No:** 04

**Total Pages:** 4
3. When do you interpret from the slope of the medium

Draw a well labeled phase diagram of water system

affinities lead.

of Phase Rule in the expression of pure lead from

With the help of a diagram explain the application

or a two component system. Explain

the system can be either a one component system

ammonium chloride is heated in a closed vessel;

stable mixture of phases.

heterogeneous system consisting of C components

Calculate the total number of variables for a

Section B

need for the branch of Statistical Mechanics.

When is Statistical Mechanics Why there was a

where the symbols have their usual meanings.

Maxwell-Boltzmann distribution law in the form:

underlined multiplicity. derive the expression for

unreasonable and with the method of Lagrange's


generating the thermodynamic properties of a

Section A

Molarity of a solution.

What is the difference between Molarity and

function of a particle.

Derive an expression for translational partition

virotegal and electronic partition functions.

is given by the product of translational rotational.

Show the complete partition function for a system

state and explain the Gurnee-Druerer law.

volts for radiant of frequency $\times 10^{14}$

Calculate the value of energy of electron in electron

suitable examples.

Explain the term "photosynthesis" by giving three

(i) Internal Conversion and Intersystem Crossing

(ii) Fluorescence and Phosphorescence

(iii) Difference the following:

2. The reaction.

energies at $6000 \AA$. Calculate the quantum efficiency of

molecules of $A$ formed on absorption of $6.0 \times 10^{-5}$

1.0 $\rightarrow 1.0$

Section A

Molarity of a solution.

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1.0 $\rightarrow 1.0$
2. (a) What do you understand by Quantum Yield of a
photoluminescent reaction? What are the causes of
high or low quantum yield?

2. (b) Why is it that in the electronic band spectrum, why there are no
nu levels present? Why is the intensity and why does it happen if an acid is
put on n and n' will give greater

2. (c) In the electronic band spectrum, which transition
Briefly explain Franck-Condon Principle.
2. Deduce the thermodynamically the phase rule equation.

2.1/4

(1) (b)

3. Devise the thermodynamic the phase rule equation.

2. Positive deviation and negative deviation from ideal causes deviation from ideal behavior. Discuss.

2. Mention the characteristics of ideal solutions. What is meant by the term phase.

2. What are the components and degree of freedom? How are they related?

2. Draw a well labeled phase diagram of water system.

2. By colligative properties. Explain, why do we observe abnormal molecular mass of solutions in certain cases when determined by colligative properties.

2. Explain, why do we observe abnormal molecular relation between elevation in boiling point and molecular weight of non-volatile solute.

2. (a) Derive from the thermodynamic considerations the relation between elevation in boiling point and molecular weight of non-volatile solute.

2. (a)

3. \[ \Delta T = \frac{1.86 K-mol^{-1}}{M} \]

3. 0.520 \% of glucose (C\textsubscript{6}H\textsubscript{12}O\textsubscript{6}) in 80.2 \% of water calculate the freezing point of a solution containing Hochstetter and Hamper's method.

3. (a)

5. Define osmotic pressure. How is it determined.

5. (a)

Section B

2. Give two examples.

2. (a)

3. What do you understand by combustion.

3. (b)

4. Write exponential rates of Crouth- Derpe law.

4. (a)

3. Discussion of a Diatomic molecule.

3. (b)

2. Discuss the salient features observed in electronic value of one Einstein is 90 kcal.

2. (a)

3. Calculate the value of wavelength of light if the law and experimental results explained.

3. (a)

2. State and explain law of photochemical equivalence.

2. (b)
Section A

4. Explain the formation of ethylene-acetate from ethylene and sodium ethoxide with mechanism.

2×4

(a) Explain the formation of ethylene-acetate from

What are the differences between RNA and DNA?

(c) Describe the general philosophy synthesized of amino acid.

(b) Explain in detail in nature. Explain why

How will you explain the acidic nature of methylamine?

1. Attempt any four of the following

Note: Attempt five questions in all, selecting two questions from each section. No. 1 is compulsory.

Maximum Marks: 32

Time: Three Hours

CH-306

Paper XX

ORGANIC CHEMISTRY

1778

GSO/M-18

Roll No.

Total Pages: 04

3+2+1+1

(a) What is denaturation of protein?

(b) Give the preparation and uses of phenol

(c) Give the preparation and uses of:

(d) Explain why are polymers and polypeptides have the

3+1+1½

(e) Give evidence to support different structure of proteins.

(f) Describe the secondary structure of proteins.
Section B

2×3
Describe the structure of the enzyme and its function.

(i) The enzyme catalyzes the reaction.
(ii) The enzyme is specific for a particular reaction.
(iii) The enzyme binds to the substrate.

5. (a) Explain the mechanism of peroxide splitting.
(b) Explain the role of the peroxide in the reaction.
(c) Explain the role of the enzyme in the reaction.

6. (a) Explain the mechanism of peroxide splitting.
(b) Explain the role of the enzyme in the reaction.
(c) Explain the role of the peroxide in the reaction.
Isoquinoline is heated with \( \text{NaOH} \). How \( \text{NH}_2 \) gets converted into \( \text{con.
con.} \text{HNO}_3 + \text{H}_2\text{SO}_4 \)?

(i) Quinoline is heated with nitric mixture.

(ii) What happens when:

\[ \text{Section A} \]

2. 1

Substitution in phen -

(c) Give a general mechanism of electrophilic

Write about molecular orbital structure of \( \text{Pyridine} \).

Increasing order of basic characters with reason.

(i) Arrange Pyridine, Pyrrole, and Phthalamide in

Note: Attempt 04 questions in all, select at least 02

Maximum Marks: 27

Time: Three hours

Organic Chemistry (Theory)

XX-CH-306

Paper III

ORGANIC CHEMISTRY

GSO/M-18

Roll No. 04

8. (a) Write about different types of stereoisomerism in polymers.

(c) Starting from malonic ester prepare:

(ii) Cyclohexane carboxylic acid.

(iii) Succinic acid.

(e) Give one example for each (only name to be given).

(h) Electrophilic in amino acid.
Complete the equations.

2. \( \text{SO}_4^2- + \text{Fe}^{3+} \rightarrow \) __________

3. \( \text{H}_2\text{S} + \text{H}_2\text{O} \rightarrow \) __________

4. \( \text{C}_2\text{H}_5\text{OH} + \text{Zn} \rightarrow \) __________

Section B

Thiophene and Furan

5. How the thiophene derivative be prepared?

6. Why is thiophene more stable than furan?

7. How to prepare the derivatives of thiophene and furan?
Section A

1. (a) Define biotechnological processes.
(b) State the advantages and disadvantages of biotechnological processes.

c. Give examples of biotechnological processes.

2. (a) Define enzyme.
(b) State the types of enzymes.

3. (a) Define biomass.
(b) State the uses of biomass.

4. (a) Define biopesticides.
(b) State the uses of biopesticides.

5. (a) Define biofertilizers.
(b) State the uses of biofertilizers.

6. (a) Define biocontrol.
(b) State the uses of biocontrol.

7. (a) Define bioenergy.
(b) State the types of bioenergy.

8. (a) Define biowaste.
(b) State the uses of biowaste.

Section B

8

1. (a) Define plant biotechnology.
(b) State the importance of plant biotechnology.

2. (a) Define molecular biology.
(b) State the importance of molecular biology.

3. (a) Define genetic engineering.
(b) State the importance of genetic engineering.

4. (a) Define tissue culture.
(b) State the importance of tissue culture.

5. (a) Define somaclonal variation.
(b) State the importance of somaclonal variation.

6. (a) Define plant regeneration.
(b) State the importance of plant regeneration.

7. (a) Define plant transformation.
(b) State the importance of plant transformation.

8. (a) Define plant regeneration.
(b) State the importance of plant regeneration.

Note: Attempt four questions from each unit. All questions carry equal marks.

Time: Three hours

Maximum Marks: 40
Unit I

1. Give botanical names and uses of the following:

(a) Wheat (p) Gram
(b) Mustard (q) Corn
(c) Oat (r) Anthem

2. Write a concise account of origin, botanical description, cultivation and uses of Wheat.

3. Write short notes on the following:

(a) Onion (q) Pear

4. Briefly describe origin, distribution, cultivation and uses of Vegetable.

5. Give botanical names and uses of the following:

(a) Cucumber (d) Chocolate
(b) Sunflower (e) Cereals
(c) Date (f) Rice
(d) Pea (g) Mustard

6. What are beverages? Describe cultivation and processing.

7. Name the plant parts used and uses of the following:

(a) Cucumber (b) Sunflower
(c) Date (d) Pea

8. Write short notes on the following:

(a) Chocolate (b) Cereals
(c) Date (d) Rice

9. Write in brief on the following:

(a) Bio-fuels (p) Cereals
(b) Chocolate (q) Cucumber

Unit II

1. With study of dry plants:

(a) Define wood seasonings.
(b) Define wood seasonings.
(c) Define wood seasonings.
(d) Define wood seasonings.
(e) Define wood seasonings.

2. What is the name of each of these tints that dealers:

(a) Cereal (b) Chocolate
(c) Date (d) Pea

3. Name the centre of origin of Potatoes.

4. Write the biological name of Sunflower.

5. (a) Define wood seasonings.
(b) Define wood seasonings.
(c) Define wood seasonings.
(d) Define wood seasonings.
(e) Define wood seasonings.

6. Which state in India contributes maximum in June?

7. What is the morphological name of Spice clove?

8. Name the colour of spice clove?

9. What is the name of spice clove?

10. Write the name of spice clove.

11. Answer the following:

(a) Define wood seasonings.
(b) Define wood seasonings.
(c) Define wood seasonings.
(d) Define wood seasonings.
(e) Define wood seasonings.

12. Answer the following:

(a) Define wood seasonings.
(b) Define wood seasonings.
(c) Define wood seasonings.
(d) Define wood seasonings.
(e) Define wood seasonings.

Note: Answer five questions in all, selecting two questions from each unit. Q. No. 1 is compulsory. All questions carry equal marks.

Time: Three Hours

Maximum Marks: 40

Economic Botany
Paper II

BOTANY

GSc/M-18

1783

Total Pages: 02
2. What is an invasive species? Enumerate the invasive species in India. Describe one of these in detail.

Section A

1.5+1.5+1.5+1.5=6.25
- Cucumber (a)
- Cotton (b)
- Gokhi pheasant (c)
- Guava (d)
- Rice paddy (e)
- Sesame (f)

Give the synonymous position of the following species:

8. The pumpkin fruit, (q)
- Potato (p)
- Rice paddy (a)
- Sweet potato (b)

Discuss the nature of damage caused, and control of the following pests:

7. Oktoberfest (6.25)
- The cycle and control of wheat stem borers
- Explain the synonymous position, nature of damage,

Section B

3.25+3=6.25
- Cold water fishes (a)
- Induced brackish (b)
- White notes on the following:

5. 3+3.25=6.25
- Christmas culture (a)
- World fish production (b)
- White notes on the following:

4. 6.25
- Onion in detail
- What are fishkeeping criteria? Describe various types of fishkeeping criteria in detail.
1. Describe the various natural fresh resources.

Section A

(a) What is zooloical name of Dungia?  
(b) Name two local pests.  
(c) What is the source of Phosphorus?  
(d) What is the significant position of Rice Weevil?  
(e) Define Everybody Fridge.  
(f) Explain the term RAS.  
(g) Define Hydrophytes.

Section B

2. marketed. How rushes and their products should be

3. Write a note on polyculture.

4. Write a note on polyculture. What are its advantages?  

5. Also, what is roofed water culture? What are its

6. Explain the management of fishery.
2. The selected counter is 10. Explain why each channel in the 8257 DMA
period of the output waveform is equally loaded in for square wave generation. What will be the time
for a clock frequency of 2 MHz is applied to 8253
(c) Pcs. of Port C in PPI 8252.
White BSR control words to first set and then reset
vectored interrupts. Explain with example.
2. (a) When do you understand from vectored and non-
question from each Unit. No. 1 is compulsory.
No. 5.
Maximum Marks: 40
Time: Three Hours

and Programming-II
Microprocessor Architecture
Paper I
ELECTRONICS
1788
1788
6G0/M-18

Total Pages: 03
Unit I

1. MHZ

- Opposed in Mode 1 and driven by a clock of
- From the counter, loaded with count of 1.525
- Determine the frequency of the output waveform
- Inversed and inverted strobe, display timing diagrams
- Discuss how 8253 is used to generate software and

2. Here this mode is used.
- Explain Mode 0 Interfere on terminal count of
- Internal Interfere of 8233.

Unit II

1. 8253. Write instructions to enable all interrupts of 8085
- Mention different interrupt lines of 8085 & Discuss

2. DMA Data Transfer sequences.
- Explain the instruction EI and DI.

3. (a) Mention different interrupt lines of 8085 & Discuss

4. (a) Explain in detail the microprocessor basics

5. (a) Explain in detail the microprocessor basics

Unit III

1. Design and discuss in detail a microprocessor based

2. Of 8257 DMA controller

(a) Write is the function of DRQ and DACK signals
(b) Logic block of 8257 DMA controller
(c) Discuss the function of each signal of the controller

6. (a) Discuss various I/O handshake signals exchanged

7. Microprocessor except RST 7.5.
- Write instructions to enable all interrupts of 8085

8. (a) Other main features.

9. Design and discuss in detail a microprocessor based
3. When is an expression represented by an expression? Explain.

3. (a) When is an expression of the kind of information

3. Which are associated with a unary operator? Explain.

3. Which are unary operators? How many operands?

3. What is an escape sequence? Give its use.

3. To what use?

3. What are keywords in C? When restrictions apply

Unit

24% Explain how single precision constant is written

24% List various advantages of an array

14% What is the purpose of comma operator?

14% What are identifiers? Explain.

Question from each Unit. No. 1 is compulsory.

Note: Attempt five questions in all sections at least one

Time: Three Hours

Maximum Marks: 40

Introduction to C and its Programming

Paper II

ELECTRONICS

1978

GS0/M-18

Total Pages: 03

ROLL NO. 03
Declare two pointers whose objects are integer

Unit I

1. Describe a one-dimensional floating point array
2. Describe a one-dimensional floating point array

3. Write an appropriate declaration for each of the
4. Commonly used strings in C
5. How strings are initialized in C
6. When are
7. What is the character array? How is it different

8. (a) Define multidimensional array How is it

Unit II

1. Write a program to find the sum of five numbers
2. Explain use of functions
3. Explain main components of function definition
4. Explain function

Unit III

5. Given seven numbers using do while loop.
6. Write a program to find the sum and average of
7. (i) Go to statement
8. (ii) Break statement (i) Continue statement :
9. Explain the following :

10. the help of suitable example

Unit IV

1. Explain the meaning and use of cast operator with
2. Whom the operators
3. is different from preprocessor function
4. Explain print function with suitable example How

7. (a) What do you mean by formal and actual

8. (b) What is the purpose of return statement?
9. What is the relation between them Why do you mean by formal and actual

4. Explain the differences between Hierarchical and network data models.

3. Explain the advantages and disadvantages of the data model. Also explain its advantages and disadvantages. 

2. (a) Explain by using an example the concept of relational model.

1. (b) Explain advantages of P/SOL.

(c) Programming languages.

1. (c) Explain the differences between S/OL and dependency.

(b) Define functional and tally functional.

(a) Explain division operator of Relational Algebra.

(Compulsory Question)

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

Time: Three Hours

Maximum Marks: 40

Paper I

COMPUTER SCIENCE

Relational Data Base Management System

G5O/M-18

1790
5. Write a program to compute average of n numbers.
6. Explain while-loop and for-loop statements.

LHII
7. Explain the use of if-then-else statement with the
   help of a program of your choice.
8. Write the syntax of if-then-else statement. Also
   explain the structure of PL/SQL block.

UNIT III
9. Explain with example the following commands in SQL:
   (i) CREATE TABLE (ii) SELECT command
   (iii) ALTER command (iv) COMMIT command
10. Explain with example the following commands:
    (a) FROM (b) WHERE

UNIT IV
11. Explain why normalization is necessary and domain oriented relational calculus.
12. Explain why the basic difference between tuple

UNIT V
13. Discuss the various types of join operations with

Example:
14. Explain with example set oriented operators.
1. Explain the difference between OSI and TCP/IP Reference Model.

2. Explain the concept of load shedding.

3. What is Bridge? Explain its working.

4. What do you mean by Switching? Explain the various switching techniques.

5. What is Multiplexing? Explain various types of multiplexing.

6. Write short note on Token Ring.

7. (a) Write short note on CSMVA/C.
(b) Explain CSMV and CSMVA/C.


9. Write short notes on the following:
   - DNS
   - WWW Services

10. What do you mean by Bluetooth? Explain its architecture.

11. Explain some key design issues that occur in Computer Networks.

Note: Attempt Five questions in all, selecting one question from each Unit in addition to Compulsory Q. No. 1. All questions carry equal marks.

Time: Three Hours

Maximum Marks: 40

Roll No. 02

Total Pages: 02

GS0/M-18

1792

Scientific Officer

Computer Science Paper II
2. What is Multimedia? Discuss its applications in

UNIT I

1. What is Video Streaming?
2. What is Video Conferencing?
3. What is Video Chat?
4. What is Video on Demand?
5. What are the advantages of Digital Video over Analog Video?
7. Compare briefly JPEG and GIF file formats.
8. What is Entertainment?

All questions carry equal marks.

From each Unit in addition to compulsory Q. No. 1, attempt five questions in all, selecting one question from each unit.

Note: Q. No. 1 is compulsory. Candidates are required to attempt five questions in all, selecting one question from each unit.

Maximum Marks: 40

Time: Three Hours
(c) Cell animation

7. Write short notes on the following:

8. What are the differences between analog and digital sound?

6. What are the attributes of sound? Discuss the differences

Unit III

4. Suitable example:

Explain various image capturing methods with

4. Explain briefly:

5. What is the importance of graphics in multimedia?

4. Difference between bitmap and vector graphics.

4. Forms of Explain:

4. What are Postscript, True Type and plug-ins?

Unit IV

8. What is digital video compression? Explain briefly various

digital video compression techniques.

8. What is digital video compression? Explain briefly various

8. Write short notes on the following:
Unit I

8. Explain Exception Handling. Write a program to show
   how to throw and catch.

9. Explain Exception Handling. Write a program to show
   how to throw and catch.

Unit II

8. Explain virtual destructor and virtual destructor.

3. Example of function overriding.

8. What is Dynamic Polymorphism? Explain with an
   example.

Unit III

8. Explain the role of inheritance and write a program to show
   multiple inheritance.

6. Explain the role of inheritance and write a program to show
   inheritance.

5. Write a program showing three types of derivations.

Note: Attempt five questions in all selecting one question

Time: Three Hours

Maximum Marks: 40

Advanced Program Using C++

COMPUTER APPLICATION

GS0/M-18

Roll No. .......... 02

Total Pages: 02
UNIT I

Methods for cell disintegration:
(e) Enzymatic disruption
(b) Bubbling column reactor
(c) Autoclave reactor

UNIT II

Write short notes on the following:
2. Secondary waste water treatment
3. Biodigesting
4. Phytoextraction

UNIT III

Name any two organisms used for SCP production for
biosequestration.
(a) Saccharomyces
(b) Algae

Name two types known to be employed as
significant for fermentation industry
(a) Yeasts
(b) Bacteria

Write short notes on the following:
1. What is importance of enrichment media in isolation
2. What is enrichment or continuous fermentation over

(Comprehensive Question)

Carry equal marks.

Note: Attempt five questions in all sections. Two questions are compulsory.

Maximum Marks: 40

Time: Three Hours

Microbial Biotechnology

Paper X

1979

GS/M-18

Total Pages: 09
I. Discuss the following:

1. Compulsory Question (4 marks)

2. Compulsory Question (4 marks)

Note: Attempt five questions in all, selecting two questions from each limit. No. 1 is compulsory. All questions carry equal marks.
9. Define Cancer. Write in detail the dietary management of kidney stones. How are they formed? Write
in detail the role of food in the prevention and treatment of kidney stones.

8. Define Nephritis. Explain the dietary modifications and diet recommended during Nephritis.

7. Define Nephritis. Explain the dietary modifications and diet recommended during Nephritis.

6. (a) What is Acute Renal Failure? Write its causes.

5. Comment on the following:

4. Explain the nutritional management for coronary heart disease in detail.

3. (a) When is Hypertension? Describe in detail its various causes and symptoms.

2. Describe in detail the dietary and nutritional management for a patient suffering from NIDDM.

1. Explain the nutritional management for hypertensive patients.

(a) Causes and symptoms of coronary heart disease.

(b) Nutritional management for hypertensive patients.

(c) Explain the nutritional management for coronary heart disease.

(d) When is Hypertension? Describe in detail its various causes and symptoms.
I. Discuss the following:

Compulsory Question (pick any 2)

Note: Attempt five questions in all, selecting no question from each unit. No. 1 is Compulsory. All questions carry equal marks.

Course 311

Time: Three hours

Maximum Marks: 40

GS0/M-18

1840

Roll No.: 03

Total Pages: 03
1. Define Cancer. Write in detail the dietary management of kidney stones.


3. Explain the national management for coronary heart disease in detail.

4. Suggest different ways to prevent hypertension.

5. Comment on the following:

(a) Nutritional management for hypertensive patients.

(b) Causes and symptoms of coronary heart disease.

(c) What is hypertension? Describe in detail its various causes.

(d) What is a new renal failure? Write its causes.

(e) Explain the dietary modifications for a patient suffering from NIDDM.
I. Write short notes on the following:

1. Compulsory question (任选题) 4×2=8

Course 312
AND CONSUMERISM
TRADITIONAL TEXTILES EMBROIDERIES
GSO/M-18
1841
Total Pages: 03
7. Define Dry Cleaning. Explain the different methods of
Dry cleaning of Fabrics.

6. Explain, how do special finishes enhance the value of
Fabrics? What influence the consumption of textiles.

5. Explain the Handloom Work of Bengal.

4. Write short notes on the following:
- What are the various kinds of Weaves?
- How is Chikankari Embroidery different from other Embroidery?
- Write in detail about the history, material, stitches and
motifs used in Chikankari Embroidery.

3. Explain details of Chikankari Embroidery.

2. (q) Manipuri Embroidery
(q) Kasuri Work

1. Write brief the following:
- Manipuri Embroidery
- Kasuri Work

9. Write paragraph on the below mentioned:
- What are the Various Kinds of Weaves?

8. Write paragraph on the below mentioned:
- How is Chikankari Embroidery different from other Embroidery?

7. Define Dry Cleaning. Explain the different methods of
Dry cleaning of Fabrics.

6. Explain, how do special finishes enhance the value of
Fabrics? What influence the consumption of textiles.
UNIT I (Section I)

Question:

1. Discuss the social and vocational development during young adulthood.

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

Course 313
Counselling
Adulthood, Guidance &
1842
GC/M-18

Total Pages: 03
7. Write short notes on the following:

6. Discuss the counseling techniques used with children.

5. What do you understand by guidance and counseling?

(Units II)

4. Describe the physical changes in old age.

3. Discuss the problems during menopause among women.

Give suggestions for coping and managing menopausal symptoms.

2. Discuss the need and principles of guidance.

What do you understand by guidance and counseling?

(Units II)

1. List II

(Units II)

1. Discuss the counseling techniques used with children.

(Units II)

1. Discuss the counseling techniques used with children.

(Units II)

1. Discuss the counseling techniques used with children.

(Units II)

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(Units II)

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(Units II)

1. Discuss the counseling techniques used with children.
I. Answer the following in 3-4 lines each: 1×8=8

1. Compulsory Question (attachment)

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

Maximum Marks: 40

Course 314

INTERIOR DECORATION

G50/M-18

ROLL NO.: 03

TOTAL PAGES: 03
2. What are the objectives of interior decoration? Explain.

3. Describe different types of color schemes with suitable examples.

4. Write in detail about equipment and accessories needed for power arrangement. When points should be followed while doing arrangement?

5. Describe formal table setting in detail. For breakfast, major meals and evening tea time. Support your answer with the help of the diagrams.

6. Write about requirement of light in different areas of a house for performing different activities.

7. Which points will you keep in mind while selecting furniture for your home?

8. Write short notes on the following:

(a) Wall coverings
(b) Floor coverings

9. While in detail about various types and materials used for window treatment mean for rest and sleep.
2. (a) Explain the use of concatenation operators.

Unit I

Operators in PHP

What is the difference between == and ===

Write the CSS code to style an element when a user hovers over it.

Write the style sheet example.

Write the XML attribute? What is the use of it?

Discuss the syntax and semantic of "in" operators in JavaScript?

Questions carry equal marks.

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

Maximum Marks: 80

Time: Three Hours

BCA-361
TOOLS
WEB DESIGNING USING ADVANCED

1928

BCA/M-18
Document

For the above XML document, create the DTD addressing the roles of person, make the necessary assumptions. Create an XML document specifying the content.

Question 8.
(a) What is a well-formed XML Document? Write a Document.

Unit III

What are the rules for naming PHP variables?

What are the different techniques for connecting to databases in PHP?

What are the different techniques for connecting to databases in ASP?

Explain.

What are the different loops available in ASP?

Explain.

Who is the difference between ID selector and class selector in CSS?

Explain using suitable examples.

How do you change the style dynamically using JavaScript? Explain using suitable examples.

What is the difference between ID selector and class selector in CSS?

Explain using suitable examples.

How can you change the style dynamically using JavaScript? Explain using suitable examples.

What is the difference between ID selector and class selector in CSS?
Substantial algorithm is applied for clipping lines.
When will be the four bit code for the view area?
When is the area of clipping technique applied to
What is the area of clipping technique applied to
When happens when scaling transformation is
coordinate?
How is a point on a circle represented using polar
What do you mean by the term scan conversion?
System?
How is a point represented in a Cartesian coordinate?
What is a bit plane?
I. Answer the following in bold:

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

Maximum Marks: 80

Time: Three Hours

BCA-363
COMPUTER GRAPHICS

1930

BCA/M-18

Total Pages: 03

Roll No.
1. Use matrix computations to derive your answer.

2. What is the square of 2 times its original size? (9, 9). What will be the new coordinates of the vertices (2, 2) and (4, 4)?

3. Consider a square with diagonal vertices at (2, 2) and (6, 6).

4. Algorithm for filling objects.

5. Explain the Bresenham's algorithm for drawing lines and scan-line fill.


7. What is the purpose of a look-up table and display processor in a graphics system?

8. Explain any four applications of computer graphics.

9. Describe any two three-dimensional display methods.

10. Write the 3-D transformation matrix for translation and rotation.

11. Inverse transformation and affine transformation.

12. What do you mean by composite transformation?

13. Derive the rotation transformation w.r.t. the origin.
Briefly describe NAT.

What is static and dynamic routing?

What is C-Mesh?

Model.

TCP/IP Application layer in terms of OSI reference model.

What is the equivalent layer or layers of the

Explain IPsec.

Explain the concept of POP protocol.

Explain term IP/4.

When is remote procedure call?

(Compulsory Question)

Questions carry equal marks.

All question from each unit Q. No. 1 is compulsory. All

Time: Three Hours

BCA-364

INTERNET TECHNOLOGIES

BCA/M-18

1931

Maximum Marks: 80

Total Pages: 03
UNIT I

2. What is OSI model? Explain the functions and protocols

3. What are the principles of firewall design? Also explain the various firewall techniques.

9. Discuss in detail about the role of DNS.

10. Discuss and contrast between DHCP and ARP in detail.

UNIT II

8. What do you mean by Internet multicasting?

9. Explain the various Internet multicasting protocols.

UNIT III

10. Discuss in detail about the protocols and services of each layer.

11. Internet and Internet Layer

12. Differentiate between VLAN and VTP.
(2-13/2) T-1932

8×2=16

access

Which data control can be used for remote
English the various data bound controls.
What do you mean by IOP and EOP?
Write the syntax to create a circle in VP.
coolbar

What is the difference between toolbar and
item?

How can you add access character to a menu
What do you mean by a form-load event?

Explain any two properties of a form.

I. (Compulsory Question)

All questions carry equal marks.
Select one question from each Unit.
Note: Q. No. 1 is compulsory. In addition to four
maximum marks: 80

BCA-363

VISUAL BASIC
ADVANCED PROGRAMMING WITH

BCA/M-18

Total Pages: 03

Roll No. ..
Chapter III

16. Write a program in VB having menu items File and Edit

4. Explain the following in detail:
   - (i) Common Dialog Box
   - (ii) Rich Text Box Control

8. Explain drop and drop operation in a form with the
   - (i) Load and unload statement
   - (ii) Activate and deactivate events
   - (iii) MessageBox

3. Write a program which creates a collection and
   - (a) items in a collection
   - (b) removing an item, counting the items and displaying the
   - (c) show various types of processing such as adding an item,

16. Write a program which creates a collection and
   - (a) items in a collection
   - (b) removing an item, counting the items and displaying the
   - (c) show various types of processing such as adding an item,
(ii) What are Container classes? Explain.

(iii) What do you mean by polymorphism? How is it achieved in JAVA?

(iv) What is the purpose of the finally clause of a try-catch block?

(v) What is the difference between interface and abstract class?

(vi) What are Command Line Arguments? Explain.

(vii) Explain the use of static keyword with an example.

(viii) What is array class? What is its usage?

(ix) Explain the significance of main method in JAVA.

1. Answer the following questions in brief:

   \[ 8 \times 2 = 16 \]

   From each unit attempt four more questions, select one question

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

   Maximum Marks: 80

   Time: Three hours

BCA-366
PROGRAMMING IN CORE JAVA

BCA/M-19

ROLL NO.: 03

TOTAL PAGES: 03
8. Draw and explain the inheritance hierarchy for the companion class in AVT.

6. What is an applet? Explain the methods used in an applet with examples.

9. What is a Swing GUI class and how does it differ from Swing class GUIs? Explain any three methods of a Swing class GUI and how does it differ from a Swing class GUI.

8. Explain the steps in creating a package. Write down the steps in creating a package. Explain the benefits of using a package. Give a suitable example.


8. Explain different ways of passing parameters to a method in Java programming.

8. Explain the following:

8. For and for.....each statement.


8. How does a Swing GUI class and how does it differ from a Swing class GUI?
Write a short note on memory hierarchy.

Explain the four-segment instruction pipeline with an example.

Unit I

must have in the b-h ordered protocol.

What is the minimum number of bits that a frame coupled microprocessors?

a multiprocessor. Why another name for lightly

How many operating systems are needed to control

hierarchies?

Why we need two-three levels in memory

Give formula for speedup of a pipeline processor.

I. Attempt all questions:

Award one question from each Unit.

Note: Attempt free questions in all (6) No. 1 is compulsory.

Maximum Marks: 40

Time: Three Hours

BSET-601
COMPUTER SYSTEM ARCHITECTURE II
BSET/M-18
12391
Roll No. 03
3. When multiprocessor improves performance?
4. What do you mean by multiprocessor?
5. Discuss broker switches.
6. Discuss in detail:

Unit II

7. Memory Management Hardware:
   a. Memory
   b. Auxiliary Memory
   c. Contiguous Memory
   d. Write down notes on any of the followings:
   e. Memory

8. Where is DATA explained in the DATA controller and its transfer.

Unit IV

9. When is DATA explained in the DATA controller and its transfer from node 10 to 101.

Appendix

1. Formulate the logical and physical address memory consists of 4K blocks of 4K words in
   up to 32 pages of 4K words in each physical memory of 256 segments each segment can have
   64 unique types of memories with examples.

4. What do you mean by cache memory?

      4x2=8
Unit 1

2. Describe frames and frames-based queries. Also write
   ACTION, METHOD, ENCTYPE, SRC, attributes of
   frame.

1. (Compulsory Question)
   (i) Differentiate between check boxes and radio
       buttons.
   (ii) What are the uses of XML?
   (iii) How JPEG is different from MPEG?
   (iv) What do you understand by "HYPERTEXT"?

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

BSIT-M-18
Web Site Implementing Basic Design Tools-II
Time: Three Hours
Maximum Marks: 40

IT
12393
Total Pages: 03
DOM pass a list of resources where the price is more than '1,000.

9. Consider an XML file which has an element called price.

Name Singer

Name Cost

Value Category Qunatity

Value XML Scheme for the Following:

9. Write XML Scheme for the Following:

6. Illustrate cascading style sheets and their properties.

5. How motion JPEG differ from MPJE?

3. Write an HTML code for designing the following form:

OPINION POINT

2. Which tools of multimedia could be implemented in

1. What is your opinion about our product

D) S/W Sales

C) S/W Development

A) Main scope:

Name of your country

Europe

Asia

Australia

Africa

America

Select your continent

Name of your organization

Select your organization

very good

bad

not good

good

Exceptionally
3. Explain the steps to be taken to prevent interceptions in the
computer network.

2. Explain the concept of an encryption algorithm.

3. (b) Explain the DES method of encryption.

2. (a) Explain the concept of encryption.

1. Unit I

Distinguish between Internet and extranet. 4×2=8

What is EDI? Explain the components of EDI.

6. What is SSL? Explain the security services adopted in SSL and SET.

7. Describe the security services adopted in SSL and SET.

8. Explain the various Internet services.

9. Explain the planning needed for creation of Internet.

Unit IV

1. Differentiate between Internet and extranet. 4×2=8

What is EDI? Explain the components of EDI.

6. What is SSL? Explain the security services adopted in SSL and SET.

7. Describe the security services adopted in SSL and SET.

8. Explain the various Internet services.

9. Explain the planning needed for creation of Internet.

Unit V

Multimedia

5. Explain briefly Hardware and Software requirements of multimedia.

6. Explain various multimedia software tools in brief.

7. Explain the concept of multimedia.

8. Explain the various multimedia standards.

9. Explain the various multimedia software tools in brief.

Note: Attempt five questions in all selecting one question from each unit. O. N is compulsory.

Time: Three hours

Maximum Marks: 40

BSIT-604

APPLICATIONS II

INTERNET CONCEPTS AND

BSIT/M-18

12394

12394

1-12394

P.T.O.

8

8

8

8

8
Unit-I

1. Discuss various steps used for designing the design of UART protocol.
2. Explain various steps used for designing the design of parallel protocol.
3. Explain various steps used for designing the design of serial protocol.
4. Discuss various steps used for designing the design of SPI protocol.
5. Discuss various steps used for designing the design of I2C protocol.
6. Discuss various steps used for designing the design of CAN protocol.

Unit-II

1. Explain the use of UART protocol in various applications.
2. Explain the use of SPI protocol in various applications.
3. Explain the use of I2C protocol in various applications.
4. Explain the use of CAN protocol in various applications.
5. Explain the use of parallel protocol in various applications.
6. Explain the use of serial protocol in various applications.

Unit-III

1. Explain the use of UART protocol in various applications.
2. Explain the use of SPI protocol in various applications.
3. Explain the use of I2C protocol in various applications.
4. Explain the use of CAN protocol in various applications.
5. Explain the use of parallel protocol in various applications.
6. Explain the use of serial protocol in various applications.

Note: Answer five questions in all by selecting one question from each unit. Maximum marks: 50

Paper-BST7-605

Embedded System and 8051 Microcontroller

BST7-M18

Time Allowed: 3 hours

Practical Papers: 2

Roll No.:

[12345]