(v) Where is the writer of these lines?
(6) How did Pa feel China?
(7) Where did Basic Khan sit?
(8) How did Pa feel Basic Khan?
(v) Who was Basic Khan?

Questions:

Read the passage given below and answer the questions.

According to the writer of this passage, will be a type of heroes.

A story about a writer of this passage. The is the subject of the story and we say our

Another type will be a type of heroes.

In the story, the writer will go to meet him with the worshipped

mother. The mother will go to meet him with the worshipped

back with him on his back in a carriage of the car and

he will return to the house and the will be with him for a

bit. And we shall all be happy and remain will

say the poem.

But he will get Samrat. The will bring us something and
1. This dress is good.
2. Is rather at home?
3. He didn’t do it, did he?
4. Best of luck.
5. When can you come?
6. How surprising!
7. When did you arrive?

Mark information in any five of the following:

(a) Produce (as a verb)
(b) Object (as a noun)
(c) Recorded (as a noun)
(d) Present (as a verb)
(e) Present (as a verb)

Words each:

(5x3=15)

3. Answer any five of the following questions given below in about 30
(i) Change into a compound sentence:

1. Write in brief about the following events:

2. Write in about 50 words about historical novel, S

4. Combine and convert into a complex sentence:

   The sun come out. The sun disappears.

7. Directed:

   Translate any seven of the following sentences as

   (a) I saw a wounded dog
      I saw a wounded dog.

   (b) I was the first to reach the spot
      I was the first to reach the spot.

   (c) In spite of this, the game to work.
      In spite of this, the game to work.

   (d) Your father is the man to solve this problem.
      Your father is the man to solve this problem.

   (e) I think that former place.
      I think that former place.

   (f) Tell me when the meeting is to take place.
      Tell me when the meeting is to take place.

   (g) I was so late for his being late, he will miss
      I was so late for his being late, he will miss.

   (h) Saw a wound dog
      Saw a wound dog.

   (i) The sun come out
      The sun come out.

8. Fill in the blanks with the appropriate translation:

   Fill in the blanks with the appropriate translation.

   Things in advance: see the table

   If you're having dinner, try to finish some

   sentence:

   5 word or phrase in any of the following

   (a) In the blanks, with the appropriate translation

   (b) Change into a compound sentence.

   (c) Combine the half of sentences into a complex

   (d) The stars come out. The sun disappears.

   (e) Saw a wound dog.

   (f) I was the first to reach the spot.
ENGLISH

GSA/D-17

1012

Maximum Marks: 80

Instructions:
1. Complete any five of the given sentences with suitable clause.
2. Complete any four of the given sentences with suitable words.
3. Answer any four questions out of the given six.

When I was young,
With Nature, hope and poetry.
Both were mine—Life was mine—making
Whose hope could string, like a bee—
Verse a breeze and blossoms stirring.

Q:

2. Answer any four questions out of the given six:

Where does the river snake in the poem?
(1)
Q:

3. Explain with reference to the context:

(a) Who are you speaking to?
(b) Everyone in them were poor.
(c) The poem which he read was fascinating.
(d) Nobody has seen him.
(e) All our neighbours help each other.
(f) The sister of Krun is very good at cooking.
(g) The police is investigating the case.

Q:

4. Write a letter to the class:

(a) He came later.
(b) She cannot pass.
(c) He cannot understand it.
(d) Walk carefully.
(e) He waited.
(f) Yet he attended the class.

Q:

5. Complete any five of the given sentences with suitable words:

(a) When I was young, I

(b) All which flowers is not gold.

(c) Those who disport from the class will repeat.

(d) He is not mad; he has living sense.

(e) This is the boy that helped the poor tailor.

Q:

6. Write a letter to the class:

(a) He came later.
(b) She cannot pass.
(c) He cannot understand it.
(d) Walk carefully.
(e) He waited.
(f) Yet he attended the class.

Q:

7. Complete any five of the given sentences with suitable words:

(a) When I was young, I

(b) All which flowers is not gold.

(c) Those who disport from the class will repeat.

(d) He is not mad; he has living sense.

(e) This is the boy that helped the poor tailor.

Q:

8. Write a letter to the class:

(a) He came later.
(b) She cannot pass.
(c) He cannot understand it.
(d) Walk carefully.
(e) He waited.
(f) Yet he attended the class.

Q:
I found the sheeps grazing in the field.

She gave a warm answer to the question.
The committee is divided on the issue.

10 All my son-in-laws are very brilliant.

7. Correct any ten sentences of the given passage.

8. Write a letter to the railway authorities regarding the redirection of goods.

9. Write a letter to the railway authorities regarding the redirection of goods.

10. What is meant by scientific point of view? Why are his characteristics? How do the countries of science react to

11. Why does Robert Lund choose to focus on pockets and

12. What is the poet's complaint in the poem "One"?

13. What happened once when I was stopped at Death's?

14. How was Sufiah associated with name?
1. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
2. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
3. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
4. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
5. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
6. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
7. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
8. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
9. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना, 
10. यह बताने वाला अनुभव का मिश्रण है, नया, अले एवं पुराना,

Maximum Marks : 80
Time : Three Hours

HINDI
GS/1-17
1015

ROLL NO. .................................
1. देवी लिखी आए हैं कई बार एक सदिया होता हैं।

2. अनेक लोग ने इन से जानकारी लिया। (a)

3. इनकी सेवा में एक दिन जीना है। (b)

4. वह दीर्घ अवसर में निकला है। (c)

5. वह एक वजह से नहीं निकला। (d)

6. वह जीवन में एक दिन जीना है। (e)

7. यह देवी ने कहा कि इन पर देवी ने देखा। (f)
First Paper
PANJABI (ELECTIVE)
GSOD-17

Total Marks: 80

Time: Three Hours
11 बनके बन बताते हैं

12 हलाल में हिला लिया

2. (ह)

16. (ह)

[Maximum Marks: 80]

Time: Three Hours]

SANSKRIT (Compulsory)

1022

GSQ/D-17

ROLL NO. ..................................................
1 ռիադ նման է
8 : նրբեր ուղի ու մի կոթտում (1)
11 ռիադ ոչ է

9 : նրբեր ուղի ու մի կոթտում (2)

11 ռիադ ոչ է

10 : նրբեր ուղի ու մի կոթտում (3)

11 ռիադ ոչ է

9 : նրբեր ուղի ու մի կոթտում (4)
2.

3.

4.

5.

6.

7.

8.

9.

10.
1. Describe the social and economic conditions of France

Section I

Unit I

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

Time: Three hours

Maximum Marks: 80

Modern Europe

Op. (!)

HISTORY

1032

GSQ/D-17

Roll No. __________________________

Total Pages: 07
1. Explain the remark that Bismarck was an 'enigma of our time'.

2. What were the causes of the French failure in the Franco-Prussian War?

3. Critically examine the significance of the Congress of Vienna in the history of Europe.

4. Review the working of the Concert of Europe? What were the causes of its failure?

5. Give a critical evaluation of the Glorious Revolution of 1688.

6. Where were the causes of its failure?

7. What were the underlying causes of the First World War?

8. Discuss the provisions, nature and effects of the Treaty of Versailles.


10. On the outline map of Germany, show the various states.

11. Why were the causes of its success?

12. What were the causes of the failure of the Revolutions of 1848 in Germany?"
I. Write very short answer to any four questions from the following. Each question carries 2 marks.

(4x2 = 8)

(a) Name three famous kings of Punjab dynasty.

(b) Who was the Pope of Rome during the time of Napoleon?

(c) What was the purpose of the domestic policy of Napoleon?

(d) Who were known as Malagor in French society?

(e) When was the government of Bolshevik party established in Russia?

II. (Composition Question) Write a letter to a friend on the event of World War II. Also add an explanatory note.

On the outline map of Europe, show the Europe on the

Part I

Part II

Choose the correct answer. Each question carries 1 mark.

1. (a) Which leader of Italy took part in Peace Settlement?
   (b) When and where James II died?
   (c) When was the government of Bolshevik Party established in Russia?
   (d) Who were known as Malagor in French society?
   (e) What was the purpose of the domestic policy of Napoleon?

2. (a) Name three famous kings of Punjab dynasty.
   (b) Who was the Pope of Rome during the time of Napoleon?
   (c) What was the purpose of the domestic policy of Napoleon?
Column A

<table>
<thead>
<tr>
<th>Time Event</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>14th August, 1945</td>
<td>(a)</td>
</tr>
<tr>
<td>15th September, 1945</td>
<td>(b)</td>
</tr>
<tr>
<td>30th August, 1945</td>
<td>(c)</td>
</tr>
<tr>
<td>30th August, 1944</td>
<td>(d)</td>
</tr>
<tr>
<td>When did Japan surrender in Second World War?</td>
<td>(e)</td>
</tr>
</tbody>
</table>

Column B

<table>
<thead>
<tr>
<th>Event</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>21st January, 1943</td>
<td>(A)</td>
</tr>
<tr>
<td>1915-25</td>
<td>(B)</td>
</tr>
<tr>
<td>1854-56</td>
<td>(C)</td>
</tr>
<tr>
<td>Murder of Louis XVI</td>
<td>(D)</td>
</tr>
<tr>
<td>Northern Germany Union was established in:</td>
<td>(E)</td>
</tr>
<tr>
<td>1871</td>
<td>(F)</td>
</tr>
</tbody>
</table>

Point: Match column A to column B. I mark for each.
1. Describe the social and economic causes of the French

Examination

Section I

Note: Attempt five questions in all sections at least one

Maximum Marks: 90

Time: Three Hours

Modern Europe (1789-1945 A.D.)

Paper II (II)

HISTORY

1033

GSA/D-17

Roll No....

Total Pages: 07
II. Short Answer Type Questions:

1. When was the National Assembly formed?

2. Describe any four questions from the following:

3. The French Revolution of 1789

4. The Causes of the First World War

5. The various stages in the unification of Italy

6. The diplomatic alliances of 1879

7. The various stages in the unification of Italy

8. The Causes of The Glorious Revolution of 1688

9. Describe the results of the Second World War

10. On the outline map of Europe show the political conditions of 186

11. Describe the results of the National Assembly

12. Describe the results of the National Assembly
(a) Victor Emmanuel

(b) 1789

(c) Napoleon

(d) France

Which one of the following was the Chancellor of Britain?

(a) Lord North

(b) Pitt

(c) Lord Rockingham

(d) Lord Salisbury
(c) Which of the following:

- (1) 1870 AD
- (2) 1907 AD
- (3) 1902 AD
- (4) 1904 AD

(d) Triple Entente was done in:

- (1) 1882 AD
- (2) 1890 AD
- (3) 1907 AD
- (4) 1914 AD

(e) The Franco-Prussian War (v) 1870-71 AD.
- (i) Germany
- (ii) France
- (iii) Peace Settlement

(f) First World War (v) 1914-1918 AD.
- (i) Germany
- (ii) Italy
- (iii) Austria

(g) French Revolution occurred in England in:

- (i) 1789 AD
- (ii) 1870 AD
- (iii) 1907 AD
- (iv) 1914 AD
I. Discuss the meaning, nature and scope of Comparative Politics.

II. Discuss the Intraparty Approach given by David Easton.

III. Critically discuss the Intraparty Approach given by...

Maximum Marks: 80

Time: Three Hours

Comparative Politics

GSE D-17

Total Pages: 06

Note: Attempt any Five Questions. All Questions carry equal marks.

(a) (b) (c) (d) (e) (f) (g) (h) (i) (j)
8. Describe the functions of judiciary.

7. What do you mean by Pressure Group? Discuss the role of Pressure Groups in modern democratic countries.

6. Explain the role of opposition party in modern Democracy.

5. Discuss critically the advantages and disadvantages of the Constitutionalist point on the problems to solve the problems of the society.

4. Discuss the various problems of Constitutionalist and...
(i) Which country have maximum pressure groups?

(a) Pakistan (b) USA (c) India (d) England

(ii) When is name of USA Legislation?

(a) Senate (b) Congress (c) Diet (d) Parliament

(iii) How many types of Party System are there in various countries?

(a) All of the above (b) Multi Party (c) Two Party (d) One Party

(iv) What is name of USA Legislation?

(a) Senate (b) Congress (c) Diet (d) Parliament

(v) Which country adopted hereditary executive?

(a) America (b) India (c) Pakistan (d) England
Plan and development and issues in development and economics 1971-72

(4) Balance in all the Sectors
(3) Balance in Service Sector
(2) Balance in Industrial Sector
(1) Balance in Agricultural Sector
Balance growth means:
(i) Chose the correct answer:

Note: Attempt any five questions only. No. 1 is compulsory.

Time: Three Hours

Maximum Marks: 80

Planning with Reference to India

ECONOMICS

ROLL NO. 06

TOTAL PAGES: 06
(iii) Labour Force Participation Rate

(iv) Family Finances is now replaced with

(v) Social and Economic

...and unemployment...

...leading to loss of output which is

...and subsumes...

...Income depression agents

(i) Fill in the blanks:

(ii) per 1000, sex ratio in India per

(iii) AD how many times is

(iv) AD none of the above

(v) AD stock of capital

(vi) AD wealth accumulation

(vii) AD capital formation

(viii) AD the process of adding to the stock of capital

...and in the table...

...the following is true or false...

...to India.
1. Explain the concept of unemployment in India. What are the causes of unemployment?

2. Explain the concept of real unemployment and urban unemployment in India.

3. Critically explain Lewis's model of unlimited supply of labour for developing countries.

1.12

4. Explain the nature of occupational structure in India.

5. Explain the concept of sustainable development. How can it be adopted in India under liberalization?

6. Define Liberalization. Explain the economic reforms introduced.

2. Explain the difference between the concept of quality of life and standard of living. Explain physical quality of life index.

1.1

1.1

(1) (2) (3) (4) (5)
1. Explain in detail about the characteristics of Adolescence.

2. Explain in detail about the factors affecting growth and development.

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

Total Marks: 60

Time: Three Hours

HEALTH AND PHYSICAL EDUCATION

G5A/D-17

Roll No. ...........................................
1. Write down any three causes of positional deformity.
2. Write down the name of any three positional deformities.
3. What do you mean by heredity?
4. Write down environmental factors affecting growth and development.
5. Write down any three stages of growth and development.
6. Write down any three abnormalities of growth and development.
7. Explain in detail about Mosander System.
8. Explain in detail about blood composition.
10. Explain in detail about principles of sports organisation and administration.
11. Prepare the profile of 21 items on knock out basis.
2. Explain about factors influencing growth and development.

1. Define growth and development and explain stages of growth and development.

I.

Unit I

Note: Attempt five questions in all selecting at least one question from each Unit. Q. No. 6 (Unit V) is compulsory. All questions carry equal marks.

Explain about factors influencing growth and development.

Q. 1: What are functions of blood?

Q. 2: What is RBC and its count in per cubic mm. [x]

Q. 3: What do you mean by gross anatomy of muscles? [x]

Q. 4: What is knock knee? [x]

Q. 5: When is knee flexed? [x]

Time: Three Hours

Maximum Marks: 50
1) Explain the importance of physical development in the growth and development of an organism.

2) What is the difference between physical development and growth?

3) Discuss in detail the principles of sports organization and administration.

4) What do you mean by tournament? Explain its types.

5) When do you mean by posture? Write in detail the importance of good posture.

6) Explain the symptoms and causes and remedy for postal pain.

7) Explain the types of muscles in human body.

8) What do you mean by composition of human blood?

9) How do glands affect the growth and development?

10) Of what use are neural glands to the body?

11) Write any two differences between growth and development.

12) What is psychology and what are the types of psychology?

13) Name three types of psychology and explain any one of them.

14) Define sports science and sports management.

15) What do you mean by sports organization? Explain its types.

16) What are the different types of sports organization?

17) How do you think sports organization can help in the development of an individual?

18) How do you think sports organization can help in the development of the nation?

19) Write one important characteristic of a sports organization.

20) Explain the importance of sports organization.
2. Give historical introduction of Raga Basant with its Arabic

Note: Answer five questions in all sections and select one

Maximum Marks: 40

Paper I

MUSIC VOCAL

GS0/D-17

Total Pages: 03

ROLL NO. ANNOTATION
Section 2.

Paper 1 (Theory)

MUSIC INSTRUMENTS

1046

Roll No. 03

Total Pages: 03
Section B

1. Write down the type of analysis to be performed.

2. What do you know about the correlation of the

3. Give a detailed description of Rain, Densen.

4. Describe the rain pattern in detail.

5. While describing the flood dimension and extreme rainfall

6. Write about the origin and development of Potonic

7. Printing the correlation which shows the results of

8. Describe the correlation which shows the amount and

9. Describe the results of analysis which indicates the

10. Writing the types of analysis to be performed.
Financial Accounting

Office Management

GS0/D-17

1059

RllNo. ..........................
Total Pages : 08

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

[Time: Three Hours] .......................... 100

1. Define Accounting. Explain its advantages and limitations.

2. What do you mean by accounting principles? Explain.

3. When is Ledger? Illustrate the posting and balancing procedure of Ledger accounts.


5. Write short notes on the following:
   a) Profit & Loss Appropriation
   b) Suspense Account
   c) Trade Discount and Cash Discount
   d) Interest on Loans
   e) Compound Entries

6. How is computer useful in accounting?
4. Is trial balance a conclusive proof of accuracy of account?

5. Why is preparation of Bank Reconciliation Statement necessary? Explain the main causes of difference in Cash Book Balance (bank column) and Pass Book Balance. 16

6. Give Journal Entries to rectify the following errors:

   (a) 8,000 paid to A for salary were debited to his personal account.

   (b) 5000 paid for furniture purchased has been debited to 8×2=16

   (c) 1,000 received from X has been credited to Y's account.

   (d) 2000 due to A. X, 000'1, have been debited to Y's account.

   (e) Sales to X @ 500 were posted to Y's account.

   (f) The purchase book was understated by 1,000.

   (g) Goods of 500 taken by the proprietor have not been entered in the books.

   (h) Goods of 500 taken by a customer were entered in Purchase Return Book.

   (i) A Return of goods worth 200 by a customer were not 200.

   (j) No entry has been made for purchase return of 100.
Dr Balance Cr Balance
Name of Account

Balance Trial Balance
that date

Ending 31st March, 2016 and the Balance Sheet as on
Prepare Trading and Profit and Loss Account for the year
8. From the following trial balance and adjustments of X.

1. A draw a two month bill of exchange on B for 1,000
2. A % 6% on 1,000 8.15.16
3. A draw a two month bill of exchange on C for 1,000
4. A discount with bank at 10% per annum.
5. When B is endorsed to C.
6. When C is endorsed to D.
7. When D is endorsed to E.
8. When A is endorsed to B.
9. When A & C is endorsed to E.
10. When B is endorsed to A.
11. When B is endorsed to C.
12. When B is endorsed to D.
13. When B is endorsed to E.
14. When B is endorsed to A.
15. When B is endorsed to C.
16. When B is endorsed to D.
17. When B is endorsed to E.
18. When B is endorsed to A.
19. When B is endorsed to C.
20. When B is endorsed to D.
21. When B is endorsed to E.
22. When B is endorsed to A.
23. When B is endorsed to C.
24. When B is endorsed to D.
25. When B is endorsed to E.
26. When B is endorsed to A.
27. When B is endorsed to C.
28. When B is endorsed to D.
29. When B is endorsed to E.
30. When B is endorsed to A.
31. When B is endorsed to C.
32. When B is endorsed to D.
33. When B is endorsed to E.
34. When B is endorsed to A.
35. When B is endorsed to C.
36. When B is endorsed to D.
37. When B is endorsed to E.
38. When B is endorsed to A.
39. When B is endorsed to C.
40. When B is endorsed to D.
41. When B is endorsed to E.
42. When B is endorsed to A.
43. When B is endorsed to C.
44. When B is endorsed to D.
45. When B is endorsed to E.
46. When B is endorsed to A.
47. When B is endorsed to C.
48. When B is endorsed to D.
49. When B is endorsed to E.
50. When B is endorsed to A.
51. When B is endorsed to C.
52. When B is endorsed to D.
53. When B is endorsed to E.
54. When B is endorsed to A.
55. When B is endorsed to C.
56. When B is endorsed to D.
57. When B is endorsed to E.
58. When B is endorsed to A.
59. When B is endorsed to C.
60. When B is endorsed to D.
61. When B is endorsed to E.
62. When B is endorsed to A.
63. When B is endorsed to C.
64. When B is endorsed to D.
65. When B is endorsed to E.
66. When B is endorsed to A.
67. When B is endorsed to C.
68. When B is endorsed to D.
69. When B is endorsed to E.
70. When B is endorsed to A.
71. When B is endorsed to C.
72. When B is endorsed to D.
73. When B is endorsed to E.
74. When B is endorsed to A.
75. When B is endorsed to C.
76. When B is endorsed to D.
77. When B is endorsed to E.
78. When B is endorsed to A.
79. When B is endorsed to C.
80. When B is endorsed to D.
81. When B is endorsed to E.
82. When B is endorsed to A.
83. When B is endorsed to C.
84. When B is endorsed to D.
85. When B is endorsed to E.
86. When B is endorsed to A.
87. When B is endorsed to C.
88. When B is endorsed to D.
89. When B is endorsed to E.
90. When B is endorsed to A.
91. When B is endorsed to C.
92. When B is endorsed to D.
93. When B is endorsed to E.
94. When B is endorsed to A.
95. When B is endorsed to C.
96. When B is endorsed to D.
97. When B is endorsed to E.
98. When B is endorsed to A.
99. When B is endorsed to C.
100. When B is endorsed to D.
101. When B is endorsed to E.
102. When B is endorsed to A.
103. When B is endorsed to C.
104. When B is endorsed to D.
105. When B is endorsed to E.
106. When B is endorsed to A.
107. When B is endorsed to C.
108. When B is endorsed to D.
109. When B is endorsed to E.
110. When B is endorsed to A.
111. When B is endorsed to C.
112. When B is endorsed to D.
113. When B is endorsed to E.
114. When B is endorsed to A.
115. When B is endorsed to C.
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**DR Balance as per Balance Sheet**

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Rent

Interest on Bank Loan

Rent from Bank Loan

Cash in Hand

Opening Stock
Calculus

1. Show that every subset of a discrete metric space is closed.

2. Let $\phi = 0$ but $A \neq B$. Give an example of two subsets $A$ and $B$ of reals such that $d(A, B) = 0$.

3. (a) Give an example of a non-empty subset of $X$ which is both open and closed in $X$.

4. (a) Let $(X, d)$ be a metric space and $f: X \to \mathbb{R}$ be a function. Prove that every convergent sequence in $(X, d)$ converges to its limit.
2. Prove that every convergent sequence in a metric space is a Cauchy sequence. Is the converse true?

3. Prove that if the complement of a metric space \((p, d')\) is closed, then \((p, d')\) is complete.

4. Prove that a subset of a metric space \((X, d)\) is an open set if it is open in \(\mathbb{R}^n\) for every open set in \(\mathbb{R}^n\).

5. Show that a space is metric if \(p(x, \{\tau\}) = d(x, \tau)\) for all \(x\) and \(\tau\) in \(\mathbb{R}^n\) and the following condition is met: for all \(\epsilon > 0\), there exists a \(\delta > 0\) such that for all \(x, \tau \in \mathbb{R}^n\), if \(d(x, \tau) < \delta\), then \(p(x, \{\tau\}) < \epsilon\).

Section I

7. Discuss the convergence of the Beta function. \(2^\frac{1}{2}\)

\[ \sum_{n=0}^{\infty} \frac{\Gamma(n+1)}{\Gamma(n+1)} = \left(\frac{\Gamma(n+1)}{\Gamma(n+1)}\right) \]

8. Prove the inequality \(\int_0^\infty e^{-x^2} dx = \frac{\sqrt{\pi}}{2}\).

9. Evaluate \(\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}\).

10. Let \(f(x) = \sin(x)\) and \(g(x) = \cos(x)\). Show that \(f(x)\) is integrable on \([a, b]\) if both \(f(x)\) and \(g(x)\) are integrable on \([a, b]\).

11. Show that if \(f(x)\) is bounded but not integrable on \([a, b]\), then \(f(x)\) is not equal to \(x\) if \(x\) is rational on \([a, b]\).

12. \(\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}\).
Prove it.

The order of every element of a finite group is

Unit

1 Define Euclidean Ring.
1 Define unit ideal and zero ideal.
1 Define Quotient Ring.
1 Define Cayley theorem.
1 Define inner automorphism with an example.
1 Define cyclic group.

(Compulsory Question)

From each Unit 0, No. 1 is compulsory.

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

Maximum Marks: 26

Time: Three Hours

Groups and Rings
BM-332
Mathematics
1072
GSO/D-17

Roll No. 03

Total Pages: 03
the field of complex numbers.

Show that \( f(x) = x^2 + x + 1 \) is irreducible over \( \mathbb{C} \).

Prime ideal of \( \mathbb{C} \). Show that every prime element in \( \mathbb{R} \) or \( \mathbb{C} \) generates a.

If \( I \) is a unique factorization domain, then \( I \) is a maximal ideal.

Show that every non-zero prime ideal of \( I \) is an ideal domain.

Prove that every Euclidean ring possesses unity.

Unit I

7. Prove that the product of two homomorphic images of a ring is a homomorphic image of the product of the two rings.

8. Let \( f \) be a homomorphism such that \( f : \mathbb{Z} \rightarrow \mathbb{Z} \) is an automorphism.

Unit II

7. Prove that \( f \) is a homomorphism of \( \mathbb{Z} \) and \( \mathbb{Z} \) is an automorphism of \( \mathbb{Z} \).

8. Let \( H \) be a subgroup of \( G \) and \( f \) is an automorphism of \( G \).

Unit III

In addition, the union of all right cosets of \( H \) in \( G \) is equal to the entire group.

6. Prove that the number of generators of a finite cyclic group.
(a) State Bessel's formula.

(b) Least 6 heads.

(c) Binomial distribution the probability of getting an unbiased coin is tossed 8 times. Find by using unity (2A + 1)^2 (x + 2)^2.

(d) Evaluate the following integral of different forms.

(e) State Gauss Backward interpolation formula.

(f) (Additional Question)

Compulsory Question

Marks:

Note: Attempt Five questions in all, select one.

Time: Three Hours

maximum Marks: 20

B.M.-33

Numerical Analysis

Mathematics

1073

GSO/D-17

Total Pages: 05

Roll No. ...
2. The probability distribution of the number of red balls are drawn one by one with replacement. Find the bag contains 3 white and 4 red balls. Three balls are picked from 100 screws. Find the probability for just one defective screw in the company are defective. Using Poisson distribution, it is given that 2% of screws manufactured by a packet of 100 screws. 

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<tr>
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<th>0</th>
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<th>10</th>
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<td>x</td>
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2. Use Lagrange's formula to find \( f(x) \) from the interpolation formula for unequal intervals.

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2. Find the lowest degree polynomial which satisfies

| 31 | 0.80 |
| 33 | 0.70 |
| 31 | 0.60 |
| 42 | 0.50 |
| 31 | 0.40 |

2. Find the value of \( \sin 32.0^\circ \) from the table.

\[
\sin x = 0.54306, 0.74926, 0.95398, 1.00000 
\]

2. Use Simpson's formula to find \( y_8 \) given:

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(a) 2. From the following table, find the number of students who obtained marks less than 45.
\[
\frac{z}{\lambda} = \left(0\right) \cdot 1 - \lambda = \frac{\lambda}{\lambda}
\]

2. Solve the following differential equation using Picard's method to find the third approximation:

\[
(\lambda + x) = \frac{\lambda}{\lambda}
\]

Find \(y(10)\) and \(y(14)\).

9. Euler's method to solve \(y = 0.57735\). 

\[
\begin{bmatrix}
1 \\
2 \\
3 \\
\end{bmatrix}
\]

1. Transform the matrix:

\[
\begin{bmatrix}
5 & 3 & 2 \\
5 & 3 & 2 \\
5 & 3 & 2 \\
\end{bmatrix}
\]

2. Find the eigenvalues of the matrix and the corresponding eigen vectors.

Evaluation using Simpson's 3rd rule:

\[
\int_0^1 \frac{x^2}{x+1} dx
\]

\[
\left[ \begin{array}{ccc}
1 & 2 & 3 \\
2 & 3 & 4 \\
3 & 4 & 5 \\
\end{array} \right] = \mathbf{A}
\]

Table:

<table>
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<th>(f(x))</th>
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6. \(\frac{ax}{b}\) from the following:

Section III
1. Which are the traditional methods of Comparative Politics?

Compulsory Question

1. Discuss the ways and means to ensure independence of judiciary.

8. What role do civil services play in a modern welfare state?

9. Explain the function of Panchayats and Zilla Parishads in India.
3. Discuss the meaning and scope of Comparative Political Culture and critically discuss the structural-functional approach of Comparative Politics.

4. What are the main components of a political constitution?

5. Which are the two main types of political constitution?

6. Dismiss the meaning of good constitution.

6. When do you mean by constitution? Describe the

Method.

3. Discuss the meaning and scope of Comparative

4. What are the main components of political constitution?

5. Which are the two main types of political constitution?

6. Dismiss the meaning of good constitution.


1. Describe the historical study and detailed description of

Unit I

2. Write the notation of one Vihayam Krishna in any one

Ragam

Part I

MUSIC VOCAL THEORY

1082 GSO/D-47

Total Pages: 03
8. What is the importance of music in life? 

9. What is the role of music in society? 

10. What is the significance of music in education? 

11. Compare the teaching of Indian classical music and Western classical music. 

12. Write about the importance of music in human life.

13. Write about the influence of music on society.

14. Write about the role of music in education and culture.

15. Write about how music has evolved over time.
Write the detailed description of any two of the following:

- write a notation in Maestro (slow bar) with two

Section A

Note: Attempt five questions in all. Selecting all questions from each section. Marks for each question from each section. Total marks: 40

Time: Three Hours

Paper I (Theory)

MUSIC (Instrumental)

1083

Total Pages: 03
10. Write one C# program to check if a number is a perfect square. Then, calculate the square root of that number.

5. Write the description in English: "Design a Java program that takes an integer as input and prints whether it is a prime number or not."

4. Write about the life-work of Ustad Allaudin Khan and his contribution in music worldwide.

8. Write about the role of music in international relations and cultural exchange.

7. Write in detail about the contribution of Nihal Benecie in India.

Section C

3. Write a C# program to calculate the factorial of a given number using recursion.

2. Write a Java program to reverse a string. Then, print the reversed string.

1. Write a C++ program to print the first 10 natural numbers.
metric space to any metric space is continuous.

2. Prove that every function from an infinite discrete

set to itself and give an example of a nowhere dense

open set.

Show that every subset of a discrete metric space is
then it is not necessary that \( f + g \in [a, b] \).

1. Give an example to show that if \( f + g \in [a, b] \),

(Compulsory Question)

(All questions carry equal marks.

Note: Attempt four questions in all sections at least one

(Compulsory Question)

Maximum Marks: 40

Time: Three Hours

Real Analysis

BM-331

Mathematics

Geometry 1997

GSO/D-17

Roll No. 04

Total Pages: 04

1997

1. Prove that every continuous image of a compact metric

space is compact.

2. Prove that the continuous image of a compact metric

open set.

If it is not the union of two non-empty disjoint

and totally bounded, then the metric space is connected if and only

if it is continuous at \( a \in X \).

Prove that every convergent sequence \( (x_n) \) in the

every sequence \( (y_n) \) in \( X \) converging to in \( X \) converging to \( a \).

Let \( f \) be a function of \( X \) into \( Y \). \( f \) is continuous if it is continuous at \( a \in X \).

Section 15

and only if its complement is open.

In a metric space \( (X, p) \), a subset of \( X \) is closed if

it is complete.

In a metric space \( (X, p) \), a Cauchy sequence in \( X \) converges in a metric

space has a convergent subsequence, then the space

is complete.

Prove that if every Cauchy sequence in a metric

space converges, then the space is complete.

Prove that every Cauchy sequence is convergent in an open

set.
Section 1

4. Prove that \((x, y) = x \cdot y\) in a metric space.

\[
\left( x, y \right) = x \cdot y
\]

\[
\left[ \left( x - y \right) \frac{1}{n} \right] = \left( x, y \right)
\]

\[
d_{1/2}
\]

5. \(x > \infty \) \( \in \mathbb{R}\) \(x\in\mathbb{R}\)

\[
\left( x, y \right) = x \cdot y
\]

\[
\left[ \left( x - y \right) \frac{1}{n} \right] = \left( x, y \right)
\]

\[
d_{1/2}
\]

Section 2

6. For \( \infty > d \geq 1 \), let

\[
\text{Verify the mean value theorem for the integral}
\]

\[
\int_{a}^{b} f(x) \, dx
\]

\[
\frac{b-a}{x}
\]

\[
\frac{1}{x-a}
\]

\[
\frac{1}{x+a}
\]

\[
\int_{a}^{b} f(x) \, dx
\]

\[
\frac{b-a}{x}
\]

\[
\frac{1}{x-a}
\]

\[
\frac{1}{x+a}
\]

\[
\int_{a}^{b} f(x) \, dx
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\]

\[
\int_{a}^{b} f(x) \, dx
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\frac{b-a}{x}
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\frac{1}{x+a}
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\[
\int_{a}^{b} f(x) \, dx
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\frac{b-a}{x}
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\frac{1}{x-a}
\]

\[
\frac{1}{x+a}
\]

\[
\int_{a}^{b} f(x) \, dx
\]

\[
\frac{b-a}{x}
\]

\[
\frac{1}{x-a}
\]
(c) Show by an example that unity of a ring and its subring is not same.

(a) Prove that a prime element is a prime ideal.

(b) Prove that if $p(x)$ is a polynomial over $\mathbb{Q}$ and $p(x)$ is irreducible.

5. (a) Prove that if $f(x)$ is a field, then $F[x]$ may not be a field.

(d) Prove that a principal ideal domain is irreducible.
Unit I

6. Prove that a division ring (Skew field) has no zero divisors.

7. Prove that the ring of integers is a principal ideal domain.

8. Let $R$ be an Euclidean ring and $a, b$ be two non-zero elements. Prove that $a$ divides $b$ if and only if $a$ is a divisor of $b$.

Unit II

4. Let $Z(G)$ be the center of a group $G$. If $G/Z$ is cyclic, then prove that $G$ is abelian.

5. The necessary and sufficient condition for a homomorphism $f$ to be one-to-one is that $Ker(f)$ is trivial.

Unit III

4. Define cyclic permutation. Multiply the cycles of any cycle in a permutation if $G$ is a group of order $n$. Then prove that $G$ is an abelian group if and only if $G$ is a group of order $n$.

5. Of degree 6 on $\{1, 2, 3, 4, 5, 6\}$, represent in a permutation group the cycles of any cycle in a permutation if $G$ is a group of order $n$. Then prove that $G$ is an abelian group if and only if $G$ is a group of order $n$.

6. Prove that any two initial (left) cosets of a subgroup $H$ are equal if and only if $H$ is a normal subgroup of $G$.
Section I

4. (d) Write Lagrange's Interpolation Formula.
(c) Define Simpson's 3/8 Rule of Interpolation.
(b) Variance 2.

Evaluating a distribution whose mean is $\lambda$ and $\sigma$.

1. (a) Evaluate $\nabla (x^2 + \sin x)$.

(Compulsory Question)

Note: All questions carry equal marks.
Questions from each section of the examination are compulsory.
Attempt five questions in all sections at least one.

Maximum Marks: 10
Time: Three Hours

Numerical Analyses

BN-33

MATHEMATICS

1099

1993-94

Section I

8. Solve $\frac{\lambda + x}{\lambda}$ using Taylor's series method. Start from $x = a$.

9. Use Picard's method to find the analytical solution of the following differential equation:

$\frac{dy}{dx} + y = e^x$, $y(0) = 1$.

Compare the numerical solution obtained with the exact solution. The exact solution is $y = e^x$.
Section I

5. Find the probability that the value of the normal variable with mean 50 and SD = 8:

\begin{align*}
0 \leq x \\
3
\end{align*}

6. If \( X \) follows a binomial distribution with mean 4 and variance 2, find \( P( |x - 4| \geq 2 ) \).

3. If \( X \) follows a binomial distribution with mean 4 and variance 2, find \( P( |x - 4| \geq 2 ) \).

4. Prove that mean and variance of Poisson distribution are same.

Section II

\((5\pi - \pi^2)x^2 + (5\pi - \pi^2)x - \pi - \pi\pi = \pi\pi\)

By means of Lagrange's formula prove that:

3. Values 3, 2, 1, respectively.

4. Find the polynomial of the lower degree which

4. Find the polynomial of the lower degree which

4. Find the polynomial of the lower degree which
1. What do you mean by population inversion and coefficient of reflectivity and transmission function?

2. Why is it necessary for laser amplification?

3. What are the advantages of a semiconductor laser?

4. Over other lasers? [x] No. 1 is compulsory.

Note: Attempt five questions in all, selecting at least one from Quantum and Laser Physics.

Time: Three Hours

Marks: 80

Physics

IX

CGAO/D-17

R011 No. 03
Unit I

1. Discuss the use of lasers in medicine.
2. Compare the laser light from a He-Ne and a Ruby laser. Why is a 100 W ordinary bulb much more powerful than a 2 MW He-Ne laser?

Unit II

1. Show that the eigenvalues are discrete.
2. One-dimensional box. Solve the Schrödinger equation for a free particle in a potential.

Unit III

1. Monochromaticity in case of laser light.
2. Discuss the properties of directionality and coherence. What is the coherence length?
3. Show that population inversion cannot be achieved using only two energy levels.
5. Illustrate the wave nature of matter.
6. Describe Davidon and Cemon experiment to illustrate the wave nature of matter.
Unit

1. (a) Calculate the value of electron magnetic moment.

2. (d) Give some conservation laws of nuclear reaction.

2. (e) Why electron cannot be accelerated in cyclotron?

2. (g) What is neutrino theory of β-decay?

2. (h) Describe the structure of nucleus. Explain why electrons cannot be the constituent of nucleus?

Note: Attempt five questions in all, selecting one question from each unit. No. 1 is compulsory. All questions carry equal marks. Non-programmable calculator is allowed.

Maximum Marks: 40

Time: Three Hours

Paper: X

Physics

1106

GS0/D-17

Roll No. 03

Total Pages: 03
6. Explain the principle of linear acceleration. Discuss the expression for the energy of the particle and length of the path in terms of the constants of the apparatus.

7. a) Explain the terms nuclear fission and fusion. b) Explain the terms nuclear fission and fusion with the help of suitable examples.

8. Q-value in case of two body system.

9. Define Q-value of a reaction. Derive an expression for the energy released per reaction.

**Unit IV**

7. Circuit Q, what will be the average current in the circuit, when will be the average current in the circuit, when the counting rate is 50 counts per minute? A GM counter that collects 10 electrons per second can be used for neutron detection. Give its application and working of a proportional counter. Give its application and working of proportional counter.

**Unit III**

7. a) Compute the maximum energy of a Compton recoil electron resulting from absorption in Al of 2.4 MeV gamma rays. b) Discuss the recoil effect. Discuss the recoil effect in Compton effect. c) Derive a relation between the angle of scattering of the photon and the angle of deflection of the electron. d) Discuss in detail the theory of absorption of the photon by a medium.
Section A

(a) Calculate CFSE for the following:

(b) Write a brief note on selection rules for d-d transitions.

(c) Write a brief note on d orbital overlap model in d-d transitions.

(d) Write a brief note on d orbital overlap model in d-d transitions.

(e) Write a brief note on d orbital overlap model in d-d transitions.

(f) Write a brief note on d orbital overlap model in d-d transitions.

(g) Write a brief note on d orbital overlap model in d-d transitions.

(h) Write a brief note on d orbital overlap model in d-d transitions.

(i) Write a brief note on d orbital overlap model in d-d transitions.

(j) Write a brief note on d orbital overlap model in d-d transitions.

[k] Write a brief note on d orbital overlap model in d-d transitions.

(l) Write a brief note on d orbital overlap model in d-d transitions.

(m) Write a brief note on d orbital overlap model in d-d transitions.

(n) Write a brief note on d orbital overlap model in d-d transitions.

(o) Write a brief note on d orbital overlap model in d-d transitions.

(p) Write a brief note on d orbital overlap model in d-d transitions.

(q) Write a brief note on d orbital overlap model in d-d transitions.

(r) Write a brief note on d orbital overlap model in d-d transitions.

(s) Write a brief note on d orbital overlap model in d-d transitions.

(t) Write a brief note on d orbital overlap model in d-d transitions.

(u) Write a brief note on d orbital overlap model in d-d transitions.

(v) Write a brief note on d orbital overlap model in d-d transitions.

(w) Write a brief note on d orbital overlap model in d-d transitions.

(x) Write a brief note on d orbital overlap model in d-d transitions.

(y) Write a brief note on d orbital overlap model in d-d transitions.

(z) Write a brief note on d orbital overlap model in d-d transitions.
Section B

2

Discuss the thermodynamic stability of a complex.

Which complex has higher value of $\Delta G^\circ$ and, why?

(a) $\text{Fe(CN)}_{6}^{3-}$

(b) $\text{Fe}^{3+}$

(c) $\text{Fe(CN)}_{6}^{4-}$

(d) $\text{Fe}^{2+}$

(e) $\text{Fe}(CN)_{6}^{3-}$

3

Define the equilibrium constant $K_{f}$.

(a) For $P^{2-}$ and $O$,

(b) When are macroscopic quantities not meaningful?

(c) Draw and discuss the reaction diagram for $[\text{Fe}(CN)_{6}]^{3-}, [\text{Fe}(O)_{2}]^{3-}$, and $[\text{Fe}^{3+}]$ complexes in terms of the experimentally observed quantities.

(d) Explain the reasonable mechanisms and reactions of the following kinetic scheme.

(e) Explain the terms dissociative and associative.

(f) Explain the term $\Delta G^\circ$ and its relation.

(g) Show stereoselectivity of substitution in the following.
PTO

1. (i) d^2-weak field octahedral
   (ii) Calculate CFSE for the following:
   Zn^{2+} ion in coloumbic

2. (i) Why T_{2g}^+ ion is purple in aqueous solution while
   (ii) Give the limitations of valence bond theory.

1. (i) What is meant by spectrochemical series?
   (ii) [Co(H_2O)_6]^{2+}, [Rh(H_2O)_6]^{2+}, [Co(NH_3)_6]^{2+}, [Co(CN)_6]^{2+}

2. (i) Which complex has higher value of a and why?
   (ii) Paramagnetic but [Co(NH_3)_6]^{2+} is diamagnetic.

Section 2

Note: Attempt the questions in all the sections at least one

Time: Three Hours

Maximum Marks: 27

Inorganic Chemistry

Paper XA (CH-301)

CHEMISTRY

G5O/D-17

ROLL No. 03

Total Pages: 03
Section B

Name two powerful intermolecular forces.

2

Describe the orbitals diagram for d and d system.

Explanation

While the term symbols for 3p configuration, 2

Calculate number of microstates for oxygen.

1/2

Sort and explain selection rules for d-d transitions.

1/2

Discuss the octet diagram for d-d and d-d system.

1/2

(a) Explain vibronic coupling.

1/2

(b) Write the term symbols for 3p configuration.

1/2

(c) Calculate number of microstates for oxygen.

1/2

Define intermolecular association.

1/2

Intermolecular association.

1/2

Which is more stable and explain why?

1/2

Arrange the [N(NH)\textsubscript{4}]\textsuperscript{2+} and [N(NH)\textsubscript{3}]\textsuperscript{2+} complexes.

1/2

4

(b) What do you mean by d-d complexes and interligand effect? Explain with a suitable example.

2

(c) Define d-d effect and ligand field transitions.

2

5

(a) Define magnetic susceptibility. How does it vary?

2

6

(a) Calculate magnetic moments for ions C\textsubscript{4}\textsuperscript{2+} and F\textsubscript{4}\textsuperscript{2+}.

1/2

(b) Explain Pauli exclusion principle and anti-exclusion principle.

1/2

(c) Explain the magnetic behavior of a substance. Give advantages of Gouy's method.

2

(d) Explain the Gouy's experiment to determine the molar magnetism of Fe\textsubscript{3}O\textsubscript{4} from spin only formula.

1/2

7

(c) Name two powerful intermolecular forces.

2

(d) Describe the octet diagram for d and d system.

2

(e) Explain the vibronic coupling.

2

(f) Write the term symbols for 3p configuration.

2

(g) Calculate number of microstates for oxygen.

2

(h) Define intermolecular association.

2

(i) What is the difference between d-d and d-d complexes.

2

(j) Explain why [N(NH)\textsubscript{4}]\textsuperscript{2+} is more stable than [N(NH)\textsubscript{3}]\textsuperscript{2+}.

2

(k) Arrange the [N(NH)\textsubscript{4}]\textsuperscript{2+} and [N(NH)\textsubscript{3}]\textsuperscript{2+} complexes.

2

(l) Define magnetic susceptibility.

2

(m) Define magnetic susceptibility. How does it vary?

2

(n) Calculate magnetic moments for ions C\textsubscript{4}\textsuperscript{2+} and F\textsubscript{4}\textsuperscript{2+}.

2

(o) Explain Pauli exclusion principle and anti-exclusion principle.

2

(p) Explain the magnetic behavior of a substance. Give advantages of Gouy's method.

2

(q) Explain the Gouy's experiment to determine the molar magnetism of Fe\textsubscript{3}O\textsubscript{4} from spin only formula.

2

(r) Calculate magnetic moments for ions C\textsubscript{4}\textsuperscript{2+} and F\textsubscript{4}\textsuperscript{2+}.

2

(s) Explain Pauli exclusion principle and anti-exclusion principle.

2

(t) Explain the magnetic behavior of a substance. Give advantages of Gouy's method.

2

(u) Explain the Gouy's experiment to determine the molar magnetism of Fe\textsubscript{3}O\textsubscript{4} from spin only formula.

2

(v) Calculate magnetic moments for ions C\textsubscript{4}\textsuperscript{2+} and F\textsubscript{4}\textsuperscript{2+}.

2

(w) Explain Pauli exclusion principle and anti-exclusion principle.

2

(x) Explain the magnetic behavior of a substance. Give advantages of Gouy's method.

2

(y) Explain the Gouy's experiment to determine the molar magnetism of Fe\textsubscript{3}O\textsubscript{4} from spin only formula.

2

(z) Calculate magnetic moments for ions C\textsubscript{4}\textsuperscript{2+} and F\textsubscript{4}\textsuperscript{2+}.

2
Section A

Select two questions from each section A and B.

II. 500

Which of the following has odd electron?
(a) $N_2O_8^-$
(b) $N_2O_4^+$
(c) $O_3^-$
(d) $NO_2^-$

2. Define group moments.
(a) $N_2O_4^+$
(b) $N_2O_8^-$
(c) $O_3^-$
(d) $NO_2^-$

3. What is a linear operator?
(a) $N_2O_4^+$
(b) $N_2O_8^-$
(c) $O_3^-$
(d) $NO_2^-$

4. What happens if the length of one-dimensional box

I. 7

Select two questions from each section A and B.

Physical Chemistry Theory

CH-302

Paper : XI

CHEMISTRY

GS/D-17

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

Maximum Marks : 32

Time : Three Hours

Section B

II. 300

1. Explain Brønsted effect on the basis of Polarity.

2. How $p$ and $d$ branches of $H_n$ are produced in

3. Derive an expression for vibrational rotational

4. Inferences of Special lines.

5. Doppler effect and lifetime broadening.

6. Degrees of Freedom of monatomic

8. Write short notes on the following:

Section C

8. Give experimental details of microwave

I. 500

1. Write a note on Relative Intensities of Rotational

2. Give advantage of Raman Spectra on IR Spectra.

2. Vibrations of $CO_2$ and $H_2O$.

determine the different normal modes of vibrations of a polyatomic molecules. Show

2. What do you understand by normal modes of
(a) What is the effect of isotopic substitution on \( \text{H}_2 \text{O} \) and \( \text{H}_2 \text{CO}_3 \)?

(b) What does one mean by special properties of molecules?

Section B

Explain the presence of long character in different substances. (c) Write and name isomers. (d) Write the application of dipole moment.

Explain loops method for measuring susceptibility.

In a recent experiment, the magnetic moment of a material of density and magnetic moment is obtained by measuring the susceptibility of specific susceptibility.

What is the cause of temperature on polarization?

A high source to find the specific reaction. (e) A solution of a certain optically active substance in ethanol was used as a cell. 1.1 in the run. The 1 cm solution was used as a standard. The sample was added to the standard. The meter was connected to the source in 0.0 and rotated. Water containing iron was added in 100 ml of water. A solution of a certain optically active substance in water was used. 2. Explain the optical activity of chiral compounds with suitable examples.

1. Whither the specific distribution of black body.

Section A

What is Hantrop's criterion for resolution of two waveguides in and \( \lambda = 6 \Omega \)?

When is Hantrop's criterion for resolution of two waveguides in and \( \Omega = 6 \)?

Which of the following molecules show rotational...

Which is principle of quantitation of energy?
2

(b) Write a note on Photoelectric effect.

3

(a) Derive Planck's radiation law.

\[
\left( x + \frac{xp}{p} \right) \left( x - \frac{xp}{p} \right)
\]

\[
\int dx
\]

Section A

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

Maximum Marks: 26

Time: Three Hours

Physical Chemistry

Paper: XI-302

CHEMISTRY

III

650/D-17

Total Pages: 03

Roll No.
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a</td>
<td>Explain the Raman effect in terms of polarizability.</td>
</tr>
<tr>
<td>2b</td>
<td>Why are Stokes and anti-Stokes lines observed along with Rayleigh line?</td>
</tr>
<tr>
<td>8a</td>
<td>Calculate the force constant for the bond in H-O.</td>
</tr>
<tr>
<td>3a</td>
<td>Explain vibration-rotation spectra for diatomic molecules.</td>
</tr>
<tr>
<td>2</td>
<td>Explain the microwave spectrum of rotational spectra.</td>
</tr>
</tbody>
</table>

**Section B**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Veneal a and of course method for measurement of dipole moment of an organic compound.</td>
</tr>
<tr>
<td>3</td>
<td>What are the applications of dipole moment?</td>
</tr>
<tr>
<td>2b</td>
<td>The bond length of H-O is 1.40Å and its dipole moment is 0.57D. Calculate the percentage increase.</td>
</tr>
</tbody>
</table>
1. Draw structure of FeH₂O₂(CH₂)₂-ethylenediamine

2. Name a compound which is not optically active

3. Type of linkage between them

4. Give names of constituent units of Lacrose and its value of S is independent of molarity.

5. Select the true or false for the following statements

Organic Chemistry
Paper XVII (CH-303)
CHEMISTRY

GSO/D-17

Total Pages: 04
Section II

2.2.3

(ii) CH₃-CH₂-COCH₃ and CH₃-COOC₂H₅

(ii) CH₃-CH₂-C=CH₂ and CH₂=CH₂

(ii) CH₃-CH₂-CH₂Br and CH₃-CH₂-CH₂Cl

(iii) Why is this used as reference compound in P Mrs? 

5. How will you distinguish between the following?

3. Why is this used as reference compound in P Mrs?

Section I

1. Why are the molecules more reactive?

2. What do you mean by proton exchange process?

3. Define induced magnetic field.

4. Give an account of rules of splitting the proton signal.

5. Define chemical shift. How is it measured?


7. Explain why it is non-reducing disaccharide.

8. Give mechanism of glucose formation and explain why it is non-reducing disaccharide.

9. What is the structure of the compound?

10. Write a short note on Glucose.

(i) D-fructose into D-glucose.

(ii) D-glucose into D-fructose.

(iii) D-arabinose into D-xylose.

How would you convert the following:

11. Give molecular formula of compounds with D-fructose and glucose give same osmotic.

12. Show one PWR signal.

13. Why is this used as reference compound in P Mrs?
Section I

Marks: 27

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

Organic Chemistry
Paper XIX (CH-303)

Chemistry

III

Time: Three Hours

Maximum Marks: 27

Organic Chemistry

Paper XIX (CH-303)
2. Explain the MR spectrum of acetophenone.

3. (a) (i) \( \text{C}_6\text{H}_5\text{COH} + \text{CH}_3\text{I} \rightarrow \text{C}_6\text{H}_5\text{CH}_{2}\text{I} + \text{H}_2\text{O} \)

(b) \( \text{C}_6\text{H}_5\text{CH}_{2}\text{I} + \text{CH}_3\text{OH} \rightarrow \text{C}_6\text{H}_5\text{CHOH} + \text{H}_2\text{O} \)

(c) \( \text{C}_6\text{H}_5\text{CH}_{2}\text{I} + \text{CH}_3\text{OH} \rightarrow \text{C}_6\text{H}_5\text{COH} + \text{CH}_3\text{I} \)

(d) \( \text{C}_6\text{H}_5\text{CH}_{2}\text{OH} \rightarrow \text{C}_6\text{H}_5\text{CHO} + \text{H}_2\text{O} \)

3. Complete the following reactions:

(a) Write a more on Reformatsky reaction.

(b) Write open chain structures of ribose and deoxyribose.

(c) Prepare glycoside from D-glucose.

(d) Give the main features and Haworth structure of sucrose.

(e) Write Haworth structure of D-fructose.

(f) How will you determine the ring size of cyclic D-fructose?

4. Write modern mechanism of ozonolysis formation of fatty aldehydes.

5. Convert D-fructose into D-glucose.


What are the reducing and non-reducing sugars?

Section B

1. Explain the MR spectrum of acetophenone.

2. Explain the MR spectrum of acetophenone.

3. (a) \( \text{C}_6\text{H}_5\text{COH} + \text{CH}_3\text{I} \rightarrow \text{C}_6\text{H}_5\text{CH}_{2}\text{I} + \text{H}_2\text{O} \)

(b) \( \text{C}_6\text{H}_5\text{CH}_{2}\text{I} + \text{CH}_3\text{OH} \rightarrow \text{C}_6\text{H}_5\text{CHOH} + \text{H}_2\text{O} \)

(c) \( \text{C}_6\text{H}_5\text{CH}_{2}\text{I} + \text{CH}_3\text{OH} \rightarrow \text{C}_6\text{H}_5\text{COH} + \text{CH}_3\text{I} \)

(d) \( \text{C}_6\text{H}_5\text{CH}_{2}\text{OH} \rightarrow \text{C}_6\text{H}_5\text{CHO} + \text{H}_2\text{O} \)

4. Write the MR spectrum of D-glucose.

5. How will you determine the ring size of cyclic D-fructose?

6. Write modern mechanism of ozonolysis formation of fatty aldehydes.

7. Convert D-fructose into D-glucose.

8. Give examples.

What are the reducing and non-reducing sugars?

Section B
Problem

1. Define photosynthesis

2. Define respiratory system

3. When is the first single product of C4 cycle

4. Give empirical formula of C6H12O6

5. Name the mineral involved in opening and closing of stomata

6. Define root pressure

7. Define imbibition

8. Define equal marks

Note: Attempt five questions in all selecting two questions

Maximum Marks: 40

Time: Three Hours

Plant Physiology

Paper I

Biology

GS/2017

II116

Roll No: 03

Total Pages: 03
Unit I

2. Discuss the effect of deficiency of nitrogen and potassium

3. Write notes on the following:

   (b) Transpiration is necessary evil

   (a) Exudates

4. Which is Seed Dormancy and discuss the various methods

5. Write notes on the following:

   (b) Ringing or Girdling experiment

   (a) Cytokinin-Pump Theory

6. Write notes on the following:

   (b) Class discuss anc Meabolism (CAM).

   (a) Photo-oxidation of water

7. Write notes on the following:

   (b) Phosphorylation

   (a) Phosphoenolpyruvate pathway

8. What are tropic movements? Explain the role of auxin

   (a) Tropic movements

8. What is Seed Dormancy and discuss the various methods

   (b) Dormancy

   (a) After dormancy
Unit I

8
Define plant succession. Explain the ecological succession.

9
Describe the various phytochoraphical regions of India.

(e) Control of water pollution
(d) Carbon cycle
(c) Energy flow in an ecosystem

4-4 What notes on any two of the following:

Write the qualitative characteristics of a community.

Unit II

8
Describe the physico-chemical properties of soil.

5
Effect of soil on growing on plants.

4
Leaves and roots.

4
What notes on the following:

8
Developed by hydrophile plants.

3
Describe the morphological and morphological adaptations.

5
Topography as an environmental factor

3
What notes on the following:

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

Time: Three Hours

Ecology

117
BOOTANY

GSQ/D-17

Roll No. Total Marks: 02
2. Discuss the effects of temperature as a climatic factor on animals.

Section A

10 x 1.5 = 15 points

Bio-geographical

5. Define interaction. Describe any two negative interactions between animal species with suitable examples. (a)

Ecosystems

6. Define population. English characteristics of population. (b)

Section B

3. Ecosystem and niche effect. (c)

5. Main ecological systems. (d)

6. What is a perfect cycle? Why is it called a perfect cycle? Explain the nitrogen cycle. (e)

4. What are biochemical cycles? Explain the nitrogen cycle. (f)

3. What is food chain? English the characteristics of a food chain. Describe two types of food chains with suitable examples. (g)

Note: Attempt five questions in all sections. Two questions in section A, three questions in section B and two questions in section C.

Zoology I

GSO/D-17

Total Pages: 2

Roll No. 02

III
I. \( 1 \times 10 = 15 \)

1. Define regression.
2. When is evolution?
3. What is Kaempferia?
4. What is phyllostachys?
5. Define pteridophyta.
6. What is archaebacteria?
7. Define divergent evolution.
8. What are converging links?
10. What are coarcevole?

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

Maximum Marks: 40

Time: Three Hours

Evolution and Developmental Biology

Paper II

ZOOLOGY

119 GSO/D-17

Roll No. 03
Section B

2% Evolution.
(b) Differentiate between micro-evolution and macro.

2% Give a brief note on Horses in Pleistocene.

6% Explain the mechanisms of reproductive isolation.

2% Discuss the significance of Lamarckism.

4% Explain the factors of Lamarckism.

2% List the conditions found on the primitive earth.

6% Discuss the embryological evidences of organic
8085 Microprocessor: Discuss the following instructions of 8085 Microprocessor:

(a) Explain the role of address buffer and address data buffer in the architecture of 8085 Microprocessor.

(b) Discuss the function of program counter, stack pointer and status flags in the architecture of 8085 Microprocessor.

(c) Discuss the following instructions of 8085:

(i) INC address, CMP ref, XRA ref and STA ref

Note: Attempt five questions in all sections of the question paper. Maximum Marks: 40

Time: Three Hours
/problems of each addressing mode.

(b) Discuss various addressing modes of SAP-II.

4. Write a delay subroutine program to introduce a

7. (a) Explain the working of each block.

8. Write a program in assembly language using SAP-

Unit II

2. Explain the instruction set of SAP-I computer.

3. (a) Explain the instruction set of SAP-II computer.

(b) What are Micro instructions for SAP-

(c) What is the size of stack of SAP-I computer?

4. (b) ADD instruction

(i) IDA instruction

(ii) IFA instruction

(iii) TDA instruction

(iv) DAA instruction

5. Answer to be based in memory location 3100H.

II Instructions to add decimal numbers 86 and 46.

6. Answer to be based in memory location 3100H.

II Instructions to complement a number.- Add.

Let the system frequency be 2 MHz and

decimal number 10 may be stored in register B

Write a delay subroutine program to introduce a

7. (a) C3H and D = A2H.

After the execution of SDB instruction, if A = 2H

What will be the contents of accumulator and flags?

(b) What do you understand by subroutine? Explain

7. (a) Each mode.

(c) Discuss direct addressing and register addressing

6. (c) What do you understand by subroutine? Explain

7. 2-2/2+.4. The memory locations 7H to 8H for

the following operation in SAP-I computer

(a) Write in Assembly language program that perform

(b) What is the size of stack of SAP-I computer?
2. (a) Define amplitude modulation and derive the

1 unit

2. (d) Why is voice signal set = 0.3R + 0.59G + 0.11B ?
2. (e) Why is scanning necessary in TV transmission ?
2. Significance in frequency modulation.
2. (b) Define the term deviation ratio and give its
communication system ?
2. (c) Why is high frequency carrier needed in a

carry equal marks.

from each unit. No. i is compulsory. All questions.

Note: Attempt five questions in all, selecting one question

Maximum Marks : 40

Time : Three Hours

1123

GS0/D-77
4. A TV system. How it affects the highest modulating frequency of composite video signal. Discuss the importance of sync. pulses in a horizontal resolution and discuss vertical and horizontal resolution. Show that in frequency modulation, the produced

Unit II

What is interference error and discussion how does it affect the quality of the picture? Calculate (i) the modulation index and (ii) carrier current in input increases to 11.6 percent, amplitude modulation by another sinusoidal voltage of 100 Hz and the current of 10 Ampere rms through an antenna. On unmodulated RF carrier power of 10 kW sends a total radiated power 30%. modulation if both the side waves modulation index. Another side wave is a capaible modulation by a sinusoidal voltage. Calculate the unmodulated and 11.25 KHz when the carrier is

Unit III

Avoid negative peak clipping. Write expression for maximum value of RC detector used for amplitude demodulation and draw the circuit and explain working of linear detector. Decrease to 100 Hz. Amplitude is increased to 12V and its frequency is doubling index if the modulating signal. Also compute the frequency deviation and the modulating voltage is 4V. Compute the modulating when the modulating frequency is 200 Hz and the frequency deviation is 4 KHz.
8

explain various Limitations of Database Management System.

2. Define and difference between record and file. Also

Unit I

(d) Give two examples of RDBMS software. 2x4=8

(c) What is the difference between Casual and Naive

(b) When do you mean by Privacy?

I. (a) What is the relation between Data and

question from each Unit

one of Units I, II, III and IV by selecting at least one

Note: Q. No. 1 is compulsory. Attempt any four questions

Time: Three Hours

Maximum Marks: 40

Fundamentals of Database Systems

Paper I

COMPUTER SCIENCE

II24

GSA/D-17

Total Pages: 03

Roll No. 03
Each course can have any number of students.
A student can enroll for any number of courses.
A course can be taken by only one teacher.
Each teacher can take any number of courses.
A teacher can work in only one department.
Any teachers can work in a department.
Each department can offer any number of courses.
A college contains many departments.

Design a DB Model for a college database with the

**Universe**

Various types of data independence
When do you mean by data independence? Explain

Describe three-level architecture of DBMS by using

**Unit II**

Diagram and give an example also.
With each other? Explain with the help of a block

**Unit I**

Physical data models.
Object-based data models.
Write short notes on the following:

3. Explain various properties of relational
6. Explain various types of integrity constraints over

and client server architecture.
Also write the advantages and disadvantages of centralized

8. Explain centralized and client server architecture to DBMS.

9. Explain various types of relational data model.

7. Write short notes on the following:

8. Describe three level architecture of DBMS by using

9. Explain various types of data independence

10. Explain with the help of a block
2. What is HTTP? Where is it used? Is it a secure protocol?

1. Explain the following with examples:
   (a) HTML
   (b) TAN
   (c) [Other answer choices not clearly visible]

Note: Attempt five questions in all, selecting one question from each Unit. 0 No. 1 is compulsory. All questions carry equal marks.

Time: Three Hours

Maximum Marks: 40

Web Designing

Computer Science

GS0/D-17

Roll No. 02

Total Pages: 02
Describe various components of PageMaker window.

2. Define DTP. What are Hardware and Software

Unit I

What do you mean by Acrobat?
What do you mean by Inking and Kerning?
Distinguish between paste and paste special.
What are the advantages of Story Editor?

(Compulsory Question)

Carry equal marks.

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

Time: Three Hours

Maximum Marks: 40

Deskstop Publishing

Paper I

Computer Application

1128

GSIA-D-17

Total Pages: 03

Roll No. 03
8. Explain various steps to apply and edit colors in Publisher.

9. Explain various steps to check and correct the spelling of words in a publication.

10. Explain various steps to create columns in the page.

6. Explain various options of control palette used for columns in a table.

7. Explain various steps to set indents.

5. (a) Explain various steps to insert and delete rows or columns in a table.

4. Explain various steps to insert the text in a box.

(a) Explain various options of Document Setup dialog.
Programming

Programming is a process of writing computer programs. A program is a set of instructions a computer follows to perform a specific task. Programming languages are used to write these instructions. There are many programming languages, each with its own syntax and features.

Common Programming Languages:
- C
- C++
- Java
- Python
- JavaScript
- Ruby
- PHP
- SQL
- Assembly

Programming Languages:
- Compiled languages: C, C++, Java, Assembly
- Interpreted languages: Python, JavaScript, Ruby, PHP

Programming Paradigms:
- Procedural programming
- Object-oriented programming
- Functional programming
- Declarative programming
- Event-driven programming
- Concurrent programming
- Reactive programming

Common Programming Concepts:
- Variables
- Data types
- Control structures (if, else, switch)
- Functions
- Loops (for, while)
- Arrays
- Strings
- Classes
- Objects
- Inheritance
- Polymorphism
- Encapsulation
- Abstraction
- Modular programming
- Test-driven development
- Version control

Understanding programming is essential for creating efficient and effective software. It involves learning a programming language, understanding the fundamentals of algorithms and data structures, and developing problem-solving skills.
Define opines with examples.

Write a note on benefits and industrial enzymes.

In transgenic plants.

Write a note on seed storage protein enhancement.

Gene transfer methods?

What are the advantages and disadvantages of direct gene transfer?

Explain the binary and co-inoculation vectors with cells.

Write a note on strategies for gene transfer to plants.

Unit II

Discuss the applications and limitations of cloning.

Write a note on protoplast fusion techniques.

Write a brief section on synthetic seeds.

Discuss the importance of plant tissue culture.

What are the advantages and limitations of callus culture?

Compulsory Question

Careful marks.

Select two questions from each unit. All questions carry equal marks. Maximum Marks: 100

Plan Biscology

Paper X

Biotechnology

11134 85/0-7

Ke N
I. Answer the following in 3-4 sentences:

Compulsory Question

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

Course 301
Dietetics

GS0-D-17

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

TIME: Three Hours

Maximun Marks: 40
3. Explain etiology, objectives of treatment and dietary management of acute constipation.

2. How can we modify normal family diet for therapeutic purposes?

1. Discuss the causes, symptoms and foods recommended for people with:

5. Describe the metabolic changes and dietary management during acute fever.

6. Discuss the etiology, health hazards and dietary management for an underweight person.

7. What is Gout? Suggest suitable dietary modifications for a person suffering from Gout.

II. UNIT

I. UNIT
8. (a) When are the tools required for the end of the day?
(b) Why is it important to have tools at the end of the day?

7. Classify dress and write in detail about household linen.

6. Describe textile desigining and explain the importance of textile desigining.

5. Write the various lining problems and remedies to solve them.

4. Explain the reasons for poor clothing.

3. Explain the reasons for designing not being undertaken.

2. Classify the types of clothes and suggest suitable clothing for them.

1. Write the various techniques for defining fashion.
Give the criteria for the selection of indoor and outdoor programming.

I. Explain the principles of planning for preschool

II. Describe

Note: Attempt five questions in all, selecting at least two.

Course 103
CHILDREN WITH SPECIAL NEEDS
EARLY CHILDHOOD EDUCATION AND

GS4/D-17
II8/1

Total Pages: 02
(a) Explain the usefulness of welfare programs meant for those children.

(b) Define the children with special needs.

(c) Welfare programs for children with special needs.

(d) Causes of speech disorders

(e) Functioning of artificial

(f) Importance of Early Childhood Education

9. Explain in brief:

Comprehensive Question

1. Exceptional children in the mainstream.

2. Exceptional children in the mainstream.

3. Describe any two types of early childhood education

4. Compare the theories given by Rousseau and Frobel.

5. Explain the role of community as a whole in bringing the education.
I. Answer the following

Compulsory Question

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

Course 304
Housing
1182

Maximum Marks: 40

Time: Three Hours

Roll No. 03
Total Pages: 03
1. Write down the advantages and disadvantages of renting a house.

2. Unit I

3. Unit II

4. Write in detail about bricks and tiles used for construction.

5. How do cooperative housing societies help in arranging a house?

6. Explain any four symbols with drawings used for reading.

7. What points will you keep in mind while purchasing a house?

8. Do the space planning of bedroom of a middle-income family.

9. How will you do the lighting arrangement inside the house?
2. What is Internet? Explain the various services of Internet

1. Explain the following:

- Web Browser
- Internal and External Linking
- Domain Name System
- ISP
- FTP

2. Compare the following:

- (a) Domain Name System
- (b) ISP
- (c) FTP
- (d) Internal and External Linking
- (e) Web Browser

3. What are the advantages of a Web server? What are its disadvantages?
Unit IV

document

When is HTML? Describe the features of HTML.

Examples:

Explain various text style tags in HTML:

<font> (i)

<blink> (ii)

<em> (iii)

Explain the following tag in HTML:

Describe the structure of HTML document:

Unit III

What is a form? Describe the syntax and use of forms.

Giving example:

What is frame in HTML? Explain <frame> tag by:

Menu:

Check Box:

Radio Button:

Explain the following in HTML:

Unit II

Differ between static and dynamic website:

What is web hosting? Describe various types of web hosting services. Also write the steps to host your website:

(a) (iv)

(b) (v)

(c) (vi)

(d) (vii)
Discuss the various functions performed by an Operating System.

Unit I

2.8
What is Threading?
What do you mean by a file?
What is safe state regarding deadlock avoidance?
What is a page in pagged memory management?
Define the term Scheduling:
Define an Operating System.

Complementary Question

Question from each Unit: Q. No. 1 is compulsory.
Note: Attempt Five questions in all sections at least one
Maximum Marks : 80

BCA-352
OPERATING SYSTEM I

122
BCA/D-17
Total Pages : 02

Rail No. : 02
Unit II

4. Explain the role of an Expert System. 16

5. (a) Discuss advantages and limitation of an Expert System. 16

(b) Explain any successful example of an Expert System. 16

Unit III

6. Explain the relevance of searching in Artificial Intelligence. 16

7. What is Heuristic Search? Explain Hill Climbing. 16

Unit IV

8. What is Robotics? Explain the concept of a robot along with its major components. 16

9. Discuss the concept of Natural Language Processing. 16
2. When is IDE? Discuss the following components of IDE.

Unit I

2. Explain passing mechanism in VB.
   (a)
2. When do you mean by named arguments?
   (b)
2. What is the use of Exit statement?
   (c)
2. What is Select case statement?
   (d)
2. Explain use defined data type.
   (e)
2. Define message box in VB.
   (f)
2. What is a combo box?
   (g)
2. List the various controls used in VB?
   (h)

I. Answer the following questions in short:

Compulsory Question

Questions carry equal marks.

Choose from each Unit. Q. No. 1 is Compulsory.

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

Time: Three Hours

Maximum Marks: 80

BCA-333

PROGRAMMING USING VISUAL BASIC

BCA/D-17

Roll No. 03
Design user interface for the following problem and write the code:

Design the procedure of creating menu in VB.

What is a function and how does it differ from

Until T

Differential between do loop and while loop.

VB? Explain with suitable example.

How will you declare a two-dimensional array in

Until T

Differential between if-then-else and case structure.

Explain control structure of VB.

Until T

Define various types of operators in VB with examples.

Variable type. Object data, Boolean data

Explain the following:

continue

What is a variable and also discuss variable

Until T

Inheritance. Explain with suitable example.

What is user interface? And how we can design user
1. Explain MPEG video compression technique. How is it different from H.264? Explain.

2. Describe JPEG, H.264, and Motion JPEG coding in detail. Explain how is JPEG compression different from H.264 and H.263.

3. Explain the JPEG compression algorithm with examples of its output.

4. Explain various digital audio file formats.

5. Write a short note on MJPEG.

6. Define multimedia.

7. Define different multimedia tools.

8. Give a brief overview of multimedia software tools.


10. Explain the difference between digital and analog signals.

11. What are the different modes of JPEG standard?

12. What is motion JPEG coding?


14. Explain the difference between analog and digital signals.

15. How is convolutional coding different from HDTV?

16. What are the different common audio file formats?

17. What do you mean by VRML?

18. Define multimedia.

19. Define multimedia tools.


21. Explain the difference between digital and analog signals.

22. What are the different modes of JPEG standard?

23. What is motion JPEG coding?


25. Explain the difference between analog and digital signals.

26. How is convolutional coding different from HDTV?

27. What are the different common audio file formats?

28. What do you mean by VRML?

29. Define multimedia.

30. Define multimedia tools.


32. Explain the difference between digital and analog signals.

33. What are the different modes of JPEG standard?

34. What is motion JPEG coding?


36. Explain the difference between analog and digital signals.

37. How is convolutional coding different from HDTV?

38. What are the different common audio file formats?

39. What do you mean by VRML?

40. Define multimedia.
2. (a) Differentiate between macro substitution and

#include<br>

7.94=16

(d) Differentiate between address of and indirection.

Search

(c) Differentiate between Linear Search and Binary

Searching?

(b) What are the characteristics of Procedure Omission?

1. (a) What is #define?

Compulsory Question

Question from each Unit Q. No. 1 is compulsory.

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

Maximum Marks: 80

Time: Three Hours

BCA-351

OBJECTED ORIENTED PROGRAMMING

INTRODUCTION TO OBJECT

1257

OBCA/D-17

Total Pages: 03

Roll No. 1257
1) Write a program to sort an array using
(a) Selection sort
(b) Insertion sort
(c) Bubble sort

2) Write a program to illustrate with example
(a) What is an array?
(b) What are the advantages of using an array?

3) Write a program to illustrate with example
(a) What is a pointer?

4) Write a program to illustrate all the static function by giving
(a) What is a static function?
(b) What is the difference between static and non-static function?

5) Write a program to illustrate with example
(a) What is the difference between dynamic and pre-defined operator?
(b) What is Operator overloading?
(c) Write a program to implement operator overloading.

6) Write a program to illustrate with example
(a) What is the difference between data abstraction and encapsulation?
(b) What is data abstraction?
(c) What is encapsulation?
(d) What are the conditional compilation directives?
1. Explain the maintenance process by a diagram.
2. Explain the waterfall model for software development.
3. What is the relationship between full and failure in testing?
4. What are the characteristics of SRS?
5. What are the advantages of Prolific Model?

(Compulsory Question)

To Question No. 1, select at least one question from each Unit in addition.
Note: 1. No. 1 is compulsory. Answer five questions in all.
Maximum Marks: 80
Time: Three Hours

BCA-353
SOFTWARE ENGINEERING
OBCA-D-17

Roll No. 02
Total Pages: 02

Page 250

16

Page 250

16

Page 250

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Page 250

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Page 250

16

16

(i) What is the difference between symmetric key and public key cryptography?

(ii) What is a router?

(iii) What is the drawback of hierarchical routing?

(iv) What is encryption?

(v) What is DSL Internet and its difference between standard and enhanced DSL?

1. (a) Define bandwidth in the context of computers.

(b) What is the need of protocol?

(c) What is Frame Relay Network Technology? (CompuNet Question)

Note: Attempt five questions in all, selecting at least one from each unit in addition to compulsory Q.

Maximum Marks: 80

Time: Three Hours

BCA-354
COMPUTER NETWORKS
OBCA/D-17

1260

Roll No. 03
2. Discuss any four network topologies in detail, with their performance indicators.

3. (a) Explain connection-oriented and connection-less services.

4. (a) Explain Ethernet implementation.

5. Write short notes on the following:

   1. Advantages, disadvantages, and types of switching along with advantages and challenges.

6. What do you mean by switching? Explain different transmission characteristics.

7. What is Bluetooth? Discuss different types of Bluetooth and what are the causes of congestion.

8. What is Routing in network? Discuss about shortest path routing with illustration.

9. Which is congestion and what are the causes of congestion?

10. Discuss various network design issues.

11. Discuss (a) What is Bluetooth? Discuss different types of Bluetooth and what are the causes of congestion.

12. Which is congestion and what are the causes of congestion?

13. What is Routing in network? Discuss about shortest path routing with illustration.

14. Write short notes on the following:

15. Discuss various network design issues.
4. What is the format of an instruction for a computer?

(b) Instructions

2. (a) Compare register reference and memory reference

Unit 1

Explain the design of accumulator logic. (2 each)

(d) How is CISC architecture more efficient?

(c) What is an I/O interface?

(e) Explain with an example.

I. (a) What is a Register Transfer Logic (RTL)? Explain

(Compulsory Question)

Carry equal marks.

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

Maximum Marks: 40
4.4

Explanation types of instructions with examples of each.

List characteristics of RISC architecture and explain

- (b) Use of overlapped register windows.
- (a) Logic Unit (ALL Boolean Logic Operations)
- (e) Multiplier Unit (integer multiplication)
- (q) Adder Unit (integer signed and integer number conversion)

Units:

Write noise on the following units of central processing

Unit I

- (b) R1 and R2.

Unit II

- (q) Write microprogram to swap the contents of registers.

Unit III

- (a) Differentiate a direct and an indirect addressing mode.

Design a special slice that implements the following

Implement the following transfer logic:

$R_2 : R_1, R_1 \rightarrow R_2$

Show block diagram of the hardware that

CPU (Central Processing Unit) $ightarrow$

How are limits and control signals generated by
2. Explain the following:

1. What is a constructor?

(c) Describe default arguments in C++ with an example.

(b) Explain the use of null characters in strings.

(a) Explain the various bitwise operators in C++.

(Compulsory Question)

Questions carry equal marks. Questions from each Unit 01 to 08 is compulsory. All questions from each Unit (01-08) are to be attempted. Five questions in all, select at least one.

[Maximum Marks: 40]

B.S.I.T.-502

PROGRAMMING IN C++

B.S.I.T/D-17

12137

Roll No. 03

Total Pages: 03
7. Explain the concept of recursion through one example.

6. Explain the concept of return type in C++ with an example.

5. Write a program in C++ to sort the given elements.

4. By giving suitable examples, explain the purpose and syntax of union data types.

3. Describe the various concepts of OOPs.

2. Describe the concept of class and objects in C++ with an example.

With suitable examples.

Explain the concept of pointers in C++ with an example.

Explain different types of argument passing in C++ with an example.

Explain the purpose and syntax of union data types.

What are pointer variables? Explain the use of pointer variables.

Describe the concept of recursion through one example.

Explain the concept of return type in C++ with an example.

Explain the concept of passing objects as arguments.

Explain the concept of class and objects in C++ with an example.
Solving at least four examples of each type.

Distinguish between computer users and comply insurers.

Describe the color scheme in HTML using hexadecimal.

Write steps to create and view HTML pages.

1. Write short notes on the following:

- Define <var> </var>
- `<img` `<img`
- `<title` `<title`
- `<h1` `<h1`
- `<a` `<a`

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

Time: Three Hours

Maximum Marks: 40

Tools:

Web-Site Design Implementing Basic Design

BSIT-103

COMPUTER

BSIT/D-17

12138

Roll No. 03

Total Pages: 03
7. Briefly discuss the following:

(a) NAME
(b) HDREF

8. Explain the following attributes of <Tables> tag:

(a) HDGREL
(b) BACKGROUND
(c) ALIGN
(d) CELLPADDING

9. Write HTML code to generate the following table:

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
<th>Qty</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>500</td>
<td>4</td>
<td>2000</td>
</tr>
<tr>
<td>Type B</td>
<td>700</td>
<td>5</td>
<td>3500</td>
</tr>
<tr>
<td>Type C</td>
<td>1000</td>
<td>3</td>
<td>3000</td>
</tr>
</tbody>
</table>

10. Write short notes on following:

(a) HEIGHT
(b) BACKGROUND
(c) ALIGN
(d) CELLPADDING

11. In HTML:

(a) Briefly describe block level and text level elements.
Symmetric DSL

(d) Why is a new Internet connection made to the following?

9. When short notes on the following:

8. Discuss satellite Internet connection and its characteristics.

VIII

What do you mean by Web connection and discuss its

What do you mean by Search Engine? Explain it.

VIII

(a) Explain the FTP commands to download and upload.

5. (a) What are the steps to configure a FTP Server?

4. Explain any four Telnet Commands.

4. (a) Compare and contrast FTP and Telnet.

VIII

INTERNET CONNECTIONS & APPLICATIONS

BSIT-017

12139

Total Pages: 79
Discuss difference between Macro and Subroutine.

8086

1. Explain Interrupt. Also discuss Interrupt cycle of

Unit 2

Write down the design issues of RISC processor

d) Discuss Mesh topology and its advantages.

c) Interfacing

Difference between dynamic and static RAM

(b) Explain Stack Structure of 8086.

2. Explain Question

Attempts the questions in all sections one question

Note: Attempt five questions in all sections one question

Time: Three Hours

[Maximum Marks: 40]
Unit I

Processor

4 Explain the advantages and disadvantages of RISC
4 Discuss salient features of 80286.
4 Discuss design issues of RISC Processors.
4 Explain Real address mode and protected virtual

Unit II

Conclusions

3 Discuss key features of Multiprocessor Memory
3 With suitable diagram.
3 Interface 8 pin ADC 0808 with 8086 using 8255

Unit III

chips with 8086.
4 Interface two 8K RAM chips and two 8K EPROM
methods.
5 Discuss memory-mapped and I/O mapped Interfacing
at address 2050:0000H onwards.
7-segment codes are stored in a look-up table sequentially.
Displays interfaced with 8086 output ports. The
while ALP to display numbers 1 to 8 on 7-segment

Unit IV

Microprocessor System that runs at 10 MHz.
4 Write an ALP to generate 100 usec. delay using a
Interrupt.
4 Differentiate between maskable and non-maskable

ADDC.
4 Explain purpose of SOC and EOC control signal of
4 Discuss the architecture of 8087.
Sometimes to perfection brought.
Let the fools rage, I swear to in naught.
According to my story plan.
The work is done, grown old be thought.

OR

Over the young streams.
From tears that drip their tears
Leaning softly our
Give them unquiet dreams.
And whispering in their ears
We seek for shimmering fruit.
That scarce could bridge a stair.
In pools among the rushes
From the hills above Glen-Cair
Where the wandering water rushes.

I. Explain with reference to the context:

**Note:** All questions are compulsory.

Maximum Marks : 80

Time : Three Hours

Paper-XI
(Modern English Literature I)

ENGLISH

16571

BSG/D.17

Roll No. 

Total Pages : 3
1. Write short notes on any two of the following:

(a) "Wicked Man": Write the critical appreciation of the poem "The Wise Old Man".

(b) "My Daughter": Comment on the central idea of the poem "A Prayer for Helpless Souls".

(c) How do the terms "Protestantism" and "Nationalism" influence the work of Saint John? Write short notes on any two of the following:

3. Comment on the character of the Dauphin.

4. "I will not look back to see whether anyone is following". Why is this line significant? Write short notes on any two of the following:

6. "The solid earth waves like the heathen sea beneath". Explain the imagery and the significance of this line.

7. What possible meanings could Shrewsbury see in the play "Macbeth"? Write short notes on any two of the following:

8. "The first three scenes were "just like a dream". With Scene Four, the play begins. Discuss the transition from the play to the play within the play."


12. Attempt any six questions of the following:

(a) "For he worlds more full of weeping than you can imagine", "The Love of God".

(b) "The Love of God" and the role of "The Love of God" in the life of the Dauphin.

(c) "The Love of God" and the importance of "The Love of God" in the life of the Dauphin.

(d) "The Love of God" and the significance of "The Love of God" in the life of the Dauphin.

(e) "The Love of God" and the depth of "The Love of God" in the life of the Dauphin.


(g) "The Love of God" and the importance of "The Love of God" in the life of the Dauphin.

(h) "The Love of God" and the significance of "The Love of God" in the life of the Dauphin.
Lavish! Indhumati all roiled into one.
But this one? You’re right — she is Vashini. Shokunala,
happend? anyone could be more beautiful than the
I give up. Devdara. I surrender to your judgment.

Of man. I knew that I had failed.
My will is clear. I was the son
and then a woman came to tell
I lay in bed two years alone.
The London seasons passed me by.

OR
It’s true we cannot live on echoes
another music.
but you sweep ahead to hear
and to hear it again,
I ask you to pause.

Note: Attempt all questions.

Maximum Marks: 80

Time: Three Hours

INDIAN WRITING IN ENGLISH

BSGD-17

16572

Roll No. 3

Total Pages: 3
3. Attempt any six questions selecting at least one from each text.

4. Attempt a critical appreciation of the "Pome of Separation".

5. Comment on the use of masks in the play.

6. Comment on the theme of the play.

7. Comment on Kaphala's character, especially his role as a poet and lover.

8. Why has Kaphala left his head in front of Goddess Devadatta?

9. Comment on the relationship of Kaphala and Devadatta in the poem "Poem of Separation".

10.探究诗歌《分离的诗》的结构和主题。

11. 评论诗歌中的面具的使用。

12. 评论诗歌中的主题。

13. 评论卡普拉的角色，尤其是作为诗人和爱人的角色。

14. 为什么卡普拉把他的头留在女神德瓦达塔的面前？

15. 评论卡普拉和德瓦达塔之间的关系。

16. 试图回答给定的问题：
3. Discuss Lucien Febvre's views on the concept of political development.

2. Define Comparative Method and discuss its features and problems.

1. Describe the meaning and scope of Comparative Politics.

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

Maximum Marks: 80

Time: Three Hours

Paper-I

[Comparative Politics (Theory)]

POLITICAL SCIENCE

BSO/D-17

16602

Total Pages: 6

Reg. No. ..............................
8. What do you mean by Pressure Groups? Describe their objectives.


Who is the author of the book "Theory and Practice of Modern Government"?

(i) Plato

(ii) Aristotle

(iii) Herman J. Finer

(iv) Carl J. Friedrich

10. Who finally used the Comparative Method?

Flexible constitution

Define in detail the merits and demerits of rigid and flexible constitutions.

11. Explain the structural-functional approach in comparative politics.
(8) The name of Modern State is

(d) Police State
(c) Military
(b) Dietarships
(a) Welfare State

(7) Which is not associated to modernisation?

(d) Aniseque
(c) Monesque
(b) Lasik
(a) Dale

(6) Who is associated with the Theory of Separation of

(d) Dale
(c) Null
(b) Lasik
(a) Dale

(5) Who is the author of book "Prince"?

(d) Machiaveli
(c) Lasik
(b) Plato
(a) Lasik

(4) Independent Press

(c) Literary
(b) Higher Education
(a) Military

(3) Who is the father of Behaviourism?

(d) Plato
(c) Machiaveli
(b) Dale
(a) David Fasion
UNIT I (Theory)

1. Can International Relations be considered an autonomous

Purpose:

1. Define International Relations. Discuss its scope and

UNII-1 (Theory-

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

Maximum Marks: 80

Paper: P-II

(Time)

POLITICAL SCIENCE

BSQD-17

16603

Total Pages: 7

Roll No. ..................................
UNIT-IV (IA) (Section-I)

7. Define Collective security. Explain its main characteristics.

UNIT-IV (IB) (Section-II)

6. What is International Law? Discuss its role as a means of limitation on national power.

UNIT-III (Section-I)

5. What do you mean by National Power? Write its main elements.

UNIT-III (Section-II)

4. Write down the characteristics of Marxist-Leninist approach towards International Politics.

UNIT-III (Section-III)

3. Critically examine the Ideological approach to the study of

Comprehensive Question (Interview-

UNIT-IV (Section-I)

9. Objective Type Questions.

UNIT-IV (Section-II)

What do you understand by Environment? Discuss the general causes of the Environmental pollution.

UNIT-IV (Section-IV)

(i) Fascim
(ii) Capitalism
(iii) Marxism

(b) In International Relations which ideology is studied?

(i) Marxism

Who wrote "Politics Among Nations"? (a) Wilson

(i) Morgenthau

i. What article is written by appeasement, "The Avonlea"? (a) Woodrow Wilson

(ii) Quincy Wright

(i) Morgenthau

What do you mean by National Power? Write its main elements.

Define Collective security. Explain its main characteristics.

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Objective Type Questions.

What article is written by appeasement, "The Avonlea"? (a) Woodrow Wilson

Who wrote "Politics Among Nations"? (a) Wilson

1. What are the two above.

(iii) Fascim
(ii) Capitalism
(iii) Marxism

Who wrote "Politics Among Nations"? (a) Wilson

(i) Morgenthau

(i) Morgenthau

(i) Woodrow Wilson

(ii) Quincy Wright

(2) Who wrote "Politics Among Nations"? (a) Woodrow Wilson

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Who said "Balance of power is the basic principle of International Relations"?

(a) Waltz
(b) Realism
(c) Hart
(d) Hegelianism
(e) Present day the reason for rise of world public opinion

Which one is not the source of power?

(a) Size
(b) Poverty
(c) Organization
(d) Knowledge
(a) New Economic Policy

(b) New Socialism

(c) Liberalism

(d) Socialism

Policy adopted by India under globalization was known

Which chapter of UN charter is related with Collective

Security?

(n) Chapter 3

(iii) Chapter 7

(ii) Chapter 9

(i) Chapter 5