Test Booklet No. \_\_\_\_\_ This booklet consists of 100 questions and 16 printed pages.

RGUCET/2024/\_\_/\_

## **RGUCET 2024** Common Entrance Test, 2024

## MASTER OF SCIENCE (STATISTICS)

Full Marks: 100

**Time: 2 Hours** 

Series

NIL

| Roll No.                     |      |      |       |  |  |  |  |  |  |
|------------------------------|------|------|-------|--|--|--|--|--|--|
| Day and Date of Examination: |      |      |       |  |  |  |  |  |  |
| Signature of Invigilator(s)  |      |      |       |  |  |  |  |  |  |
| Signature of                 | f Ca | ndid | ate _ |  |  |  |  |  |  |

General Instructions:

## PLEASE READ ALL THE INSTRUCTIONS CAREFULLY BEFORE MAKING ANY ENTRY.

- 1. DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE TOLD TO DO SO.
- 2. Candidate must write his/her Roll Number on the space provided.
- 3. This Test Booklet contains 100 Multiple Choice Questions (MCQs) from the concerned subject. Each question carries 1 mark. There shall be negative marking of 0.25 against each wrong attempt.
- 4. Please check the Test Booklet to verify that the total pages and total number of questions contained in the test booklet are the same as those printed on the top of the first page. Also check whether the questions are in sequential order or not.
- 5. Candidates are not permitted to enter into the examination hall after the commencement of the entrance test or leave the examination hall within one hour thirty minutes.
- 6. Making any identification mark in the OMR Answer Sheet or writing Roll Number anywhere other than the specified places will lead to disqualification of the candidate.
- 7. Candidates shall maintain silence inside and outside the examination hall. If candidates are found violating the instructions mentioned herein or announced in the examination hall, they will be summarily disqualified from the entrance test.
- 8. In case of any dispute, the decision of the Entrance Test Committee shall be final and binding.
- 9. The OMR Answer Sheet consists of two copies, the Original copy and the Student's copy.

| 1     | Which of the follow   |   | Answer<br>option  |  |  |  |  |
|-------|---|---|---|--|--|--|--|
|       | ) <b>D</b> '  | 1 \ \ \ \   |   |  | -  |  |  |
| -     | a) Rice   | b) Wheat  | c) Beans  | d) Maize   | (c)  |  |  |
| 2     | The term "Fourth Es   | state" refers to  |   |  | Answer<br>option   |  |  |
|       | a) Backward<br>States   | b) Judiciary  | c) Press  | d) Tea Estates   | (c)  |  |  |
| 3     | SAIL's plant in Kar   | nataka is situated  | at  |  | Answer<br>option<br>(a,b,c or<br>d)  |  |  |
|       | a)Bangalore   | b) Bhadravati   | c) Belgaum  | d) Hubli   | (b)  |  |  |
| 4     | The name of India's   | first carrier is  |   |  | Answer<br>option   |  |  |
|       | a) INS Vikrant  | INS Vikrant b) INS Nilgiri c) INS Kukri d) INS<br>Himgiri   |   |  |  |  |  |
| 5     | Thalassemia is a hereditary disease affecting-  |   |   |  |  |  |  |
|       | a) Blood b) Lungs c) Heart d) Kidney  |   |   |  |  |  |  |
| 6     | Our country is a spin   | ritual country, the   | rsreligiou  | IS.  | Answer   |  |  |
|       |   |   | C   |  | option<br>(a)  |  |  |
|       | a Is  | h Ara   |   | d Have   |  |  |  |
| _     |   | U. AIC  | C. AISO   | u. Have  | 15   |  |  |
| 7     | Match the following   | g pairs of synonyn  | $\frac{100}{100}$   | u. Have  |  |  |  |
| 7     | Match the following<br>A. Reconcile   | g pairs of synonyn  | I. Anticipated  | u. Have  | Answer   |  |  |
| 7     | Match the following       A.       Reconcile       B.       Perceived   | g pairs of synonyn  | I. Anticipated<br>II. Accommoda   | ate  | Answer<br>option   |  |  |
| 7     | a.13Match the followingA.ReconcileB.PerceivedC.AdvocateD.Utercervely  | g pairs of synonyn  | I. Anticipated<br>II. Accommoda<br>III. Echelons  | ate  | Answer<br>option<br>(a)  |  |  |
| 7     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchy  | g pairs of synonyn  | I. Anticipated<br>II. Accommoda<br>III. Echelons<br>IV. Speaker   | ate  | Answer<br>option<br>(a)  |  |  |
| 7     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV D-III  | b. A-I  | I. Anticipated<br>II. Accommoda<br>III. Echelons<br>IV. Speaker<br>c. A-IV  | d. A-I   | Answer<br>option<br>(a)<br>A-II  |  |  |
| 7     | a.ISMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-III   | b. A-I<br>B-II<br>C-III   | I. Anticipated<br>II. Accommoda<br>III. Echelons<br>IV. Speaker<br>c. A-IV<br>B-II<br>C-III   | d. A-I<br>B-IV<br>C-II   | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV   |  |  |
| 7     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-III   | b. A-I<br>B-II<br>C-III<br>D-IV   | I. Anticipated<br>II. Accommoda<br>III. Echelons<br>IV. Speaker<br>C. A-IV<br>B-II<br>C-III<br>D-I  | d. A-I<br>B-IV<br>C-II<br>D-III  | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III  |  |  |
| 7     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the follow  | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c   | I. Anticipated<br>II. Accommoda<br>III. Echelons<br>IV. Speaker<br>C. A-IV<br>B-II<br>C-III<br>D-I  | d. A-I<br>B-IV<br>C-II<br>D-III  | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer  |  |  |
| 7     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the follow  | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c   | I. Anticipated<br>II. Accommoda<br>III. Echelons<br>IV. Speaker<br>C. A-IV<br>B-II<br>C-III<br>D-I<br>orrectly punctuated   | d. A-I<br>B-IV<br>C-II<br>D-III  | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option  |  |  |
| 7     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the follow  | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c   | I. Anticipated<br>II. Accommoda<br>III. Echelons<br>IV. Speaker<br>c. A-IV<br>B-II<br>C-III<br>D-I<br>orrectly punctuated   | d. A-I<br>B-IV<br>C-II<br>D-III<br>?   | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)   |  |  |
| 8     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the followa.a.Everyone  | b. A-I<br>B-II<br>C-III<br>D-IV<br>b. Everyon   | I.     Anticipated       II.     Accommoda       III.     Echelons       IV.     Speaker       c.     A-IV       B-II     C-III       D-I     orrectly punctuated       c.     Everyon  | d. A-I<br>B-IV<br>C-II<br>D-III<br>?   | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone   |  |  |
| 8     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the followa.Everyonehas special skills;   | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special  | c.       Anso         is       I.         I.       Accommoda         II.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e       has       special   | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special   | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has  |  |  |
| 8     | a.       Is         Match the following         A.       Reconcile         B.       Perceived         C.       Advocate         D.       Hierarchy         a.       A-II, B-I,         C-IV, D-III         Which of the follow         a.       Everyone         has special skills;         some people use  | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,  | I.     Anticipated       II.     Accommoda       III.     Echelons       IV.     Speaker       c.     A-IV       B-II     C-III       D-I     orrectly punctuated       c.     Everyon       e     has       skills     some  | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,  | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special   |  |  |
| 7 8   | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the followa.a.Everyonehas special skills;some people usethem very well.   | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people                           | I.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e       has         skills       some         people       use them  | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people                           | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;  |  |  |
| 8     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the followa.Everyonehas special skills;some people usethem very well.   | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people<br>use them very          | I.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e       has         skills       some         people       use them         very well.       State   | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people<br>use them very          | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;<br>some  |  |  |
| 8     | a.IsMatch the followingA.ReconcileB.PerceivedC.AdvocateD.Hierarchya.A-II, B-I,C-IV, D-IIIWhich of the followa.a.Everyonehas special skills;some people usethem very well.   | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people<br>use them very<br>well. | I.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e       has         skills       some         people       use         very well.  | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people<br>use them very<br>well. | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;<br>some<br>people  |  |  |
| 8     | a.       Is         Match the following         A.       Reconcile         B.       Perceived         C.       Advocate         D.       Hierarchy         a.       A-II, B-I,         C-IV, D-III         Which of the follow         a.       Everyone         has special skills;         some people use         them very well.  | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people<br>use them very<br>well. | I.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e       has         skills       some         people       use them         very well.       Some  | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people<br>use them very<br>well. | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;<br>some<br>people<br>use them  |  |  |
| 8     | A.       Reconcile         B.       Perceived         C.       Advocate         D.       Hierarchy         a.       A-II, B-I,         C-IV, D-III       Which of the follow         a.       Everyone         has special skills;       some people use         them very well.       Vone who possesses   | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people<br>use them very<br>well. | I.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e       has         skills       some         people       use them         very well.       Some  | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people<br>use them very<br>well. | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;<br>some<br>people<br>use them<br>very well.                            |  |  |
| 7 8 9 | a.       Is         Match the following         A.       Reconcile         B.       Perceived         C.       Advocate         D.       Hierarchy         a.       A-II, B-I,         C-IV, D-III       Which of the follow         a.       Everyone         has special skills;       some people use         them very well.       'One who possesses   | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people<br>use them very<br>well. | I.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e has special       skills some         people use them         very well.   | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people<br>use them very<br>well. | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;<br>some<br>people<br>use them<br>very well.<br>Answer                  |  |  |
| 7 8 9 | a.       Is         Match the following         A.       Reconcile         B.       Perceived         C.       Advocate         D.       Hierarchy         a.       A-II, B-I,         C-IV, D-III         Which of the follow         a.       Everyone         has special skills;         some people use         them very well.  | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people<br>use them very<br>well. | I.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e       has         skills       some         people       use         very well.  | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people<br>use them very<br>well. | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;<br>some<br>people<br>use them<br>very well.<br>Answer<br>option<br>(c) |  |  |
| 7 8 9 | a.       Is         Match the following         A.       Reconcile         B.       Perceived         C.       Advocate         D.       Hierarchy         a.       A-II, B-I,         C-IV, D-III       Which of the follow         a.       Everyone         has special skills;       some people use         them very well.       'One who possesses         is?       a.         Exception       a. | b. A-I<br>B-II<br>C-III<br>D-IV<br>ing sentences is c<br>b. Everyon<br>e has special<br>skills; and,<br>some people<br>use them very<br>well. | c.       Anso         II.       Anticipated         II.       Accommoda         III.       Echelons         IV.       Speaker         c.       A-IV         B-II       C-III         D-I       orrectly punctuated         c.       Everyon         e has       special         skills       some         people       use them         very well.       e word substitute for         c.       Versatile | d. A-I<br>B-IV<br>C-II<br>D-III<br>?<br>d. Everyone<br>has special<br>skills and,<br>some people<br>use them very<br>well. | Answer<br>option<br>(a)<br>A-II<br>B-I<br>C-IV<br>D-III<br>Answer<br>option<br>(a)<br>Everyone<br>has<br>special<br>skills;<br>some<br>people<br>use them<br>very well.<br>Answer<br>option<br>(c) |  |  |

| 10 | Select the most appr<br>The <u>incidental</u> meet<br>expend his business | opriate anton<br>ing with the i | iym o<br>nvest  | f the un<br>cors at N | derlined wo<br>Ir. Sinha's p | ord.<br>oarty helpe   | ed him  | Answer<br>option<br>(c) |
|----|---|---------------------------------|-----------------|-----------------------|------------------------------|-----------------------|---------|-------------------------|
|    | a. Fortunate  | b. Imp<br>nt                    | orta            | с.                    | Planned                      | d. A<br>ry            | rbitra  | Planned                 |
| 11 | Arrange the words g<br>1. Presentation 2.<br>Introduction                 | given below in<br>Recommer      | n a m<br>ndatio | eaningf<br>n 3.       | ul sequence<br>Arrival 4.    | Discussi              | on 5.   | Answer<br>option<br>(c) |
|    | a. 5, 3, 4, 1, 2  | b. 3, 5<br>2, 1                 | , 4,            | c.<br>2               | 3, 5, 1, 4,                  | d. 5, 3,              | 1, 2, 4 | 3, 5, 1, 4,             |
| 12 | In an election betw   | een two can                     | didate          | es, one               | got 55% o                    | f the total           | valid   | Answer                  |
|    | votes, 20% of the v   | votes were in                   | valid           | . If the              | total numb                   | er of vote            | es was  | option                  |
|    | 7500, the number of valid votes that the other candidate got, was :       |                                 |                 |                       |                              |                       |         | (b)                     |
| 10 | a. 2500   | b. 27                           | 00              | C.                    | 2900                         | d. 3100               | • ,     | 2700                    |
| 13 | A and B invest in a   | business in th                  | e rati          | 0 3: 2. 1             | 15% of the                   | total profi           | it goes | Answer                  |
|    | to charity and A's sh   | lare is Ks. 85.                 | o, the          | total pr              | 0111 1S:                     |                       |         | option                  |
|    | a 500   | b 10                            | 00              | 0                     | 1500                         | 4 2000                |         | (C)                     |
| 14 | a. 500<br>Select the related nu   | U. 10                           |                 | en alter              | natives                      | u. 2000               |         | Answer                  |
| 17 | 18·5··12·?  |                                 | ic giv          |                       | natives                      |                       |         | ontion                  |
|    | 10.5.12   |                                 |                 |                       |                              |                       |         | option                  |
|    | a) 4  | b) 10                           |                 | c) 3                  |                              | d) 6                  |         |                         |
|    |   | -) - 0                          |                 | - , -                 |                              | -) -                  |         | (c)                     |
|    |   |                                 |                 |                       |                              |                       |         |                         |
| 15 | P is the brother of Q   | . U is the fath                 | ner of          | T who                 | is the broth                 | er of S. R            | is the  | Answer                  |
|    | mother of Q whose   | sister is S. Ho                 | ow is           | U relate              | ed to R?                     |                       |         | option                  |
|    |   |                                 |                 | -                     |                              |                       |         |                         |
|    | a) Husband  | b) Brothe                       | er              | c) Fat                | ner                          | d) Son                |         | (a)                     |
| 16 | Which Indian foc<br>international footbal                                 | otballer recently<br>11?        | ntly            | announ                | ced his r                    | etirement             | from    | d)                      |
|    | a) Bhaichung  | b) Gurr                         | oreet           | c)                    | Sandesh                      | d)                    | Sunil   | ~                       |
|    | Bhutia  | Singh Sandl                     | nu              | Jhinga                | n                            | Chhetri               |         | Sunil                   |
|    |   | 0                               |                 | 0                     |                              |                       |         | Chhetri                 |
| 17 | Match List I and Lis<br>given below:                                      | st II correctly                 | ' and           | select y              | our answer                   | using the             | codes   |                         |
|    | List I  |                                 |                 |                       | List II                      |                       |         |                         |
|    | A. Baichung E   | Bhutia                          | i.              | Braz                  | zil                          |                       |         |                         |
|    | B. Christina R  | onaldo                          | ii.             | Arg                   | entina                       |                       |         | a)                      |
|    | C. Lionel Mes   | si                              | iii.            | Port                  | ugal                         |                       |         |                         |
|    | D. Ronaldinho   | )                               | iv.             | Indi                  | a                            |                       |         |                         |
|    |   |                                 |                 |                       |                              |                       |         |                         |
|    | a) A-iv, B-iii, C-ii,<br>D-i  | b) A-ii, B-i<br>iy, D-iii       | , C-            | c) A-iv<br>D-iii      | v, B-i, C-ii,                | d) A-iv,<br>C-i, D-ii | B-iii,  | A-iv, B-<br>iii. C-ii.  |
|    | -   | ,                               |                 |                       |                              | , 2 11                |         | D-i                     |
| 18 | Which of the follo  | wing stateme                    | ents a          | re true               | for Electro                  | omagnetic             | Field   |                         |
|    | radiation (EMF) rad   | iation?                         |                 |                       |                              | C                     |         | a)                      |

|    | A. It refers to the                |                      |                       |                          |             |  |  |
|----|------------------------------------|----------------------|-----------------------|--------------------------|-------------|--|--|
|    | B. This energy                     | is released from t   | he antennas of mo     | bile towers and          |             |  |  |
|    | mobile handsets.                   | 1 • • •              | 1 .                   | 1 • • 1                  |             |  |  |
|    | C. It is classific                 | ed as non-ionizing   | and possesses ext     | remely minimal           |             |  |  |
|    | D When RF en                       | erav is very strong  | such as from rada     | r transmitters it        |             |  |  |
|    | can be dangerous.                  |                      |                       |                          |             |  |  |
|    | a) A-True, B-True,                 | b) A-False, B-       | c) A-True, B-         | d) A-True, B-            | A-True,     |  |  |
|    | C-True, D-True                     | True, C-True,        | False, C-True,        | True, C-False,           | B-True,     |  |  |
|    |                                    | D-True               | D-True                | D-True                   | C-True,     |  |  |
|    |                                    |                      |                       |                          | D-True      |  |  |
| 19 |                                    |                      |                       |                          |             |  |  |
|    | Consider the Assert                | ion (A) and Justific | cation (B) given be   | low:                     |             |  |  |
|    | A. Assoution, DM M                 | [ad: laid the form d | tion atoms for these  |                          |             |  |  |
|    | A: Assertion: PM M                 | loai laid the lounda | ation stone for three | e semiconductor          |             |  |  |
|    | B: Justification: F                | establishing a ser   | niconductor fabric    | cation plant in          | a)          |  |  |
|    | India can lead to                  | the country's eco    | nomic growth an       | d technological          | u)          |  |  |
|    | advancement.                       | 5                    | 8                     | 0                        |             |  |  |
|    |                                    |                      |                       |                          |             |  |  |
|    | Choose the correct a               | answer from the co   | de given below:       |                          |             |  |  |
|    |                                    |                      |                       |                          |             |  |  |
|    | a) Both statements                 | b) Both              | c) Statement (A)      | d) Statement             | Both        |  |  |
|    | are correct and (B)                | statements are       | is correct and        | (B) is correct           | statements  |  |  |
|    | 1s the correct $avalanation of(A)$ | true and (B) is      | Statement (B) is      | and Statement            | are         |  |  |
|    | explanation of (A).                | avplanation of       | meorreet.             | (A) IS                   | and (B) is  |  |  |
|    |                                    | (A)                  |                       | incorrect.               | the         |  |  |
|    |                                    | (A).                 |                       |                          | correct     |  |  |
|    |                                    |                      |                       |                          | explanatio  |  |  |
|    |                                    |                      |                       |                          | n  of  (A). |  |  |
| 20 | The Udupi Power C                  | Corporation Limited  | d thermal plant wa    | s ordered to pay         |             |  |  |
|    | compensation for th                | e cause of damage    | to the environmer     | nt and the health        | c)          |  |  |
|    | of people around. T                | he thermal plant is  | owned by whom o       | f the following?         |             |  |  |
|    | a) Reliance Energy                 | b) NTPC              | c) Adani Group        | d) Tata Power            | Adani       |  |  |
|    |                                    |                      |                       |                          | Group       |  |  |
| 21 | Four non more the                  |                      |                       |                          | ٨           |  |  |
| 21 | Four non-zero vecto                | n will always be     |                       |                          | Answer      |  |  |
|    |                                    |                      |                       |                          | option      |  |  |
|    | a) Linearly                        | b) Linearly          | c) Either             | d) None of the           |             |  |  |
|    | depedent                           | independent          | (a) or (b)            | above                    | (a)         |  |  |
| 22 | In a three dimension               | al xyz space, the ec | uation $x^2 - 5x + 6$ | 6 = 0 represents         | Answer      |  |  |
|    |                                    |                      | -                     | -                        | option      |  |  |
|    |                                    | I                    |                       |                          |             |  |  |
|    | a) Points                          | b) planes            | c) curves             | d) pair of straight line | (b)         |  |  |
| 23 | The number of plan                 | es that are equidis  | tant from four non    | -coplanar points         | Answer      |  |  |
|    | is                                 |                      |                       |                          | option      |  |  |
|    |                                    | <b>1</b> -) <b>4</b> |                       | 1)0                      | (-)         |  |  |
|    | a) 5                               | 0) 4                 | C) /                  | a)9                      | (C)         |  |  |

| 24 | If P is a point on the $y = 4x - 1$ then the   | est to the straight   | Answer<br>option   |                                  |                                     |  |  |
|----|--|---|--|----------------------------------|-------------------------------------|--|--|
|    | a) (-2,8)  | b) (1.5)  | c) (3,13)  | d) (2,8)                         | (d)                                 |  |  |
| 25 | $\frac{d(\log_e X)(\log_a X)}{dx} = ?$   |   |  |                                  | Answer option                       |  |  |
|    | a) $(1/X)$<br>$\log_a X$   | b) $(1/X)$<br>$\log_X X$  | c) $(2/X)$<br>$\log_a X$   | d) (2/X)logX                     | (c)                                 |  |  |
| 26 | Let $f(x)$ be a function<br>Then $\int_0^{\pi} f(x) \sin x  dx$  | on satisfying $f(x)$<br>lx is equal to  | $f(\pi-x) = \pi$   | $\tau^2$ for all $x$ in R.       | Answer<br>option                    |  |  |
|    | a) a) $\frac{\pi^2}{2}$  | b) π <sup>2</sup>   | c) $\pi^2/4$   | d) $2 \pi^2$                     | (b)                                 |  |  |
| 27 | If the progressions 3,10,17, and 63,65,67, are such that their n <sup>th</sup> terms are equal, the n equal to   |   |  |                                  |                                     |  |  |
|    | a) 13  | b) 1  | c) 19  | d) 18                            | (a)                                 |  |  |
| 28 | Ten different letters of an alphabet are given. Words with five letters are<br>formed from these given letters. Then the number of words which have at<br>least one letter repeated is |   |  |                                  |                                     |  |  |
|    | a) 69760   | b) 30240  | c) 99784   | d) None of these                 | (a)                                 |  |  |
| 29 | The value of k for which the equation (k-2) $x^2 + 8 x + k + 4 = 0$ has both roots real distinct and negative is   |   |  |                                  |                                     |  |  |
|    | a) 0   | b) 2  | c) 3   | d) 4                             | (b)                                 |  |  |
| 30 | The differential equation<br>(a). Variable radii ar<br>(b). Variable radii ar<br>(c) . Fixed radius 1 a<br>(d). Fixed radius X-  | ation $\frac{dy}{dx} = \frac{\sqrt{1-y^2}}{y}$<br>and a fixed Centre and a fixed Centre a<br>and variable Centre<br>axis 1 and variable | determine a family<br>t (0,1)<br>tt (0,-1)<br>es along the X-axis<br>e centres along the | of circles with<br>Y-axis        | Answer<br>option                    |  |  |
|    | a) Only (a) and (b)<br>true  | b) (a) and (d)<br>true  | c) Only (c) is<br>true   | d) All of the above are true     | (c)                                 |  |  |
| 31 | If $y = y(x)$ and $\frac{2+s}{y+1}$  | $\frac{dy}{dx} = -\cos x$   | y(0) = 1 then y  | $r(\frac{\pi}{2})$ equals        | Answer<br>option                    |  |  |
|    | a)1/3  | b) 2/3  | c) -1/3  | d) 1                             | (a)                                 |  |  |
| 32 | The general solution $0 \ (x \neq 0)$ is (where  | n of the differentiate, <i>C</i> is a constant o  | l equation $(y^2 - x^2)$<br>f integration)   | dx - xy  dy =                    | Answer<br>option<br>(a,b,c or<br>d) |  |  |
|    | a) $y^2 - 2x^2 + Cx^3 = 0$   | b) $y^2 + 2x^3 + Cx^2 = 0$  | c) $y^2 + 2x^2 + Cx^3 = 0$   | d) $y^2 - 2x^3 + Cx^2 = 0$       | (b)                                 |  |  |
| 33 | Let $y = y(x)$ be the $x \log_e x$ , $(x > 1)$ . If  | solution of the difference $2y(2) = log_e 4 - log_e 4$  | fferential equation<br>- 1, then y(e) is eq  | $x\frac{dy}{dx} + y =$<br>ual to | Answer<br>option<br>(a,b,c or<br>d) |  |  |

|    | a) $\frac{-e}{2}$  | b) $\frac{-e^2}{2}$  | c) $\frac{e}{4}$   | d) $\frac{e^2}{4}$                          | (c)              |  |
|----|--|--|--|---|------------------|--|
| 34 | If $B = \begin{bmatrix} 5 & 2\alpha & 1 \\ 0 & 2 & 1 \\ \alpha & 3 & - \\ all values of \alpha for w$  | $\begin{bmatrix} 1\\ 1 \end{bmatrix}$ is the inverse of<br>hich $ A  + 1 = 0$ is | f a 3 $\times$ 3 matrix A,   | then the sum of                             | Answer<br>option |  |
|    | a) 0   | b) -1  | c) 1   | d) 2  | (a)              |  |
| 35 | If $\int \frac{x+1}{\sqrt{2x-1}} dx = f(x)$<br>then $f(x)$ is equal to   | of integration,  | Answer<br>option   |   |                  |  |
|    | a) $\frac{2}{3}(x+2)$  | b) $\frac{1}{3}(x+4)$  | c) $\frac{2}{3}(x-4)$  | d) $\frac{1}{3}(x+1)$                       | (b)              |  |
| 36 | A value of $\theta \in (0, \frac{\pi}{3})$   |  | Answer<br>option   |   |                  |  |
|    | a) $\frac{\pi}{9}$   | b) $\frac{\pi}{18}$  | c) $\frac{7\pi}{24}$   | d) $\frac{7\pi}{36}$                        | (a)              |  |
| 37 | If $A = \begin{bmatrix} \alpha & 2 \\ 2 & \alpha \end{bmatrix}$ and  |  | Answer<br>option   |   |                  |  |
|    | a) <u>±</u> 1  | b) ±2  | c) ±3  | d) <u>+</u> 5                               | (c)              |  |
| 38 | The product of three<br>each of the first and<br>an AP. Then, the sur  | e consecutive term<br>the second of thes<br>n of the original th                 | s of a GP is 512. If<br>the terms, the three to<br>three terms of the given                        | 4 is added to<br>erms now form<br>ven GP is | Answer<br>option |  |
|    | a) 36  | b) 28  | c)32   | d)24  | (b)              |  |
| 39 | The sum $\sum_{k=1}^{20} k \frac{1}{2^k}$  | s equal to   |  |   | Answer<br>option |  |
|    | a) $2 - \frac{11}{2^{19}}$   | b) $1 - \frac{11}{2^{20}}$   | c) $2 - \frac{3}{2^{17}}$  | d) $2 - \frac{21}{2^{20}}$                  | (a)              |  |
| 40 | If the sum of the first 15 terms of the series<br>$\left(\frac{3}{4}\right)^3 + \left(1\frac{1}{2}\right)^3 + \left(2\frac{1}{4}\right)^3 + 3^3 + \left(3\frac{3}{4}\right)^3 + \cdots$ Is equal to 225k, then k is equal to |  |  |   |                  |  |
|    | a) 180   | b) 27  | c)54   | d)9   | (b)              |  |
| 41 | If the system of equation<br>x + y + az = b $2x + 5y + 2z = 6$ $x + 2y + 3z = 3$ has infinitely many solution then 2a+3b is equal to   |  |  |   |                  |  |
|    | a) 25  | b) 28  | c) 25  | d) 20                                       | (c)              |  |
| 42 | Suppose a,b,c are in then the value is ?   | AP and $a^2$ , $b^2$ , $c^2$   | are in GP. If a <b<c< td=""><td>and <math>a+b+c = 3/2</math></td><td>Answer<br/>option</td></b<c<> | and $a+b+c = 3/2$                           | Answer<br>option |  |

|    | a) $\frac{1}{2} - \frac{1}{\sqrt{2}}$   | b) $\frac{1}{2} + \frac{1}{\sqrt{2}}$             | c) 1/2   | d) None of these  | (a)   |  |  |
|----|---|---|--|---|---|--|--|
| 43 | Sum of n terms of se  | eries will be 12+ 1                               | 6+24+40+ will b  | be?   | Answer<br>option  |  |  |
|    | a) $2(2^{n}-1) + 8n$  | b) $2(2^{n}-1) + 6n$                              | c) $3(2^{n}-1) + 8n$   | d) $4(2^2-1)+8n$  | (d)   |  |  |
| 44 | If $a1, a2, a3, are a16 = 40$ . Then the  | e is Arithmetic Prog<br>e sum of the first 1      | gression (AP) such<br>5 terms of this AP   | that $a1 + a7 +$ is   | Answer<br>option  |  |  |
|    | a) 200  | b)280   | c)120  | d)150   | (a)   |  |  |
| 45 | If $a_1, a_2, a_3,$ are in a harmonic progression with $a_1=5$ and $a_2=25$ . Then<br>the least positive integer n for which $n < 0$ is |   |  |   |   |  |  |
|    | a) 22   | b)23  | c)24   | d) 25   | (d)   |  |  |
| 46 | The value of $\int \frac{dx}{x^2(x^4+1)^{3/4}}$ is  |   |  |   |   |  |  |
|    | a) $\left(\frac{x^4+1}{x^4}\right)^{1/4} + c$   | b) $(x^4 + 1)^{1/4} + c$                          | c)<br>$-(x^4+1)^{\frac{1}{4}}+c$   | d) .<br>$-(\frac{x^4+1}{x^4})^{1/4} + c$  | (d)   |  |  |
| 47 | If $\int x^5 e^{-x^2} dx = g($<br>then $g(-1)$ is equal   | $f(x)e^{-x^2} + c$ , where to                     | <i>c</i> is a constant of  | integration,  | Answer<br>option  |  |  |
|    | a) -1   | b) 1  | c) $-\frac{1}{2}$  | d) $-\frac{5}{2}$   | (d)   |  |  |
| 48 | The value of $\int \frac{\cos^3 x}{\sin^2 x}$   | $\frac{+\cos^5 x}{+\sin^4 x} dx$ is               |  |   | Answer<br>option  |  |  |
|    | a) $sinx - 6tan^{-1}(sinx) + c$   | b) $sinx - 2(sinx)^{-1} + c$                      | c) $sinx - 6tan^{-1}(sinx) - 2(sinx)^{-1} + c$   | d) $sinx + 5(sinx) - 2(sinx)^{-1} + c$  | (c)   |  |  |
| 49 | What is a conjugate   | prior in Bayesian                                 | probability?   |   | Answer<br>option<br>(c)   |  |  |
|    | (a) A prior<br>distribution that is<br>updated to a<br>posterior<br>distribution using<br>Bayes' theorem.                               | (b)Adistributionusedtorepresentuncertainknowledge | (a) A<br>distribution that<br>remains in the<br>same family as<br>the posterior<br>distribution after<br>updating. | (d) A prior<br>distribution<br>that is<br>independent of<br>the likelihood<br>function. | A<br>distributio<br>n that<br>remains in<br>the same<br>family as<br>the<br>posterior |  |  |

|                          |  |  |   |   | distributio  |  |  |  |
|--------------------------|--|--|---|---|--|--|--|--|
|                          |  |  |   |   | n after  |  |  |  |
|                          |  |  |   |   | updating.  |  |  |  |
| 50                       | What is the formula  | to calculate Bayes   | sian probability?   |   | Answer   |  |  |  |
|                          |  |  |   |   | option   |  |  |  |
|                          |  |  |   |   | (b)  |  |  |  |
|                          | (a) $P(B A) =$   | (b) $P(A B)$   | (c) $P(A B) =$  | (d) $P(B A)$  | P(A B) =   |  |  |  |
|                          | (P(A B) * P(B)) /  | = (P(B A) *  | (P(B) * P(A)) /   | = (P(A) *   | (P(B A) *  |  |  |  |
|                          | P(A)   | P(A)) / P(B)   | P(B A)  | P(B)) / P(A B)  | P(A)) /  |  |  |  |
|                          |  |  |   |   | P(B)   |  |  |  |
| 51                       | A more robust para   | metric alternative t   | to the independent  | samples t test is   | Answer   |  |  |  |
|                          | the:   |  |   |   | option   |  |  |  |
|                          |  |  |   |   |  |  |  |  |
|                          | (a) matched  | (b) one-way  | (c) Welch's   | (d) Wilcox  | Wilcoxon   |  |  |  |
|                          | pairs t test.  | ANOVA  | t test.   | on rank-sum   | rank-sum   |  |  |  |
|                          |  |  |   | test.   | test.  |  |  |  |
|                          |  |  |   |   |  |  |  |  |
| 52                       | The production of li   | gnite in India from  | n 1975 to 1985 in N   | In. Tones was,  | Answer   |  |  |  |
|                          | 3.03, 4.02, 3.58, 3.3  | , 2.9, 5.11, 6.31, 6.  | .93, 7.3, 7.8, 8.03   |   | option   |  |  |  |
|                          | It is expected that  | the median produ   | iction of lignite in  | India is 5Mn.   | (d)  |  |  |  |
|                          | Tones/yr. to test $H_0$ :  | M=5, the value of  | T in Wilcoxon signature   | ned rank test is  | • (  |  |  |  |
|                          | (a) 28   | (b) 27   | (c) 25  | (d) 26  | 26   |  |  |  |
| 53                       | If there are 10 sym  | bols of two types  | s, equal in number  | ; the maximum   | Answer   |  |  |  |
|                          | possible number of   | runs 1s:   |   |   | option   |  |  |  |
|                          |  |  |   |   | (c)  |  |  |  |
|                          | (a) 2  | (b) 8  | (c) 10  | (d) 9   | 10   |  |  |  |
| 54                       | 54 The statistic H under the Kruskal-Wallis test is approximately distributed  |  |   |   |  |  |  |  |
|                          | as   |  |   |   | option   |  |  |  |
|                          |  |  |   |   |  |  |  |  |
|                          |  |  |   |   |  |  |  |  |
|                          | (a) Student's t  | (b) Snedeco  | (c) Chi-  | (d) Norma   | Chi-   |  |  |  |
| ~~                       | (a) Student's t  | (b) Snedeco<br>r's F   | (c) Chi-<br>square  | (d) Norma<br>1 deviate Z  | Chi-<br>square   |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two i  | (b) Snedeco<br>r's F<br>ndependent binom   | (c) Chi-<br>square<br>ial variates having   | (d) Norma<br>1 deviate Z<br>integer   | Chi-<br>square<br>Answer   |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two i<br>parameters m and n  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob  | (c) Chi-<br>square<br>ial variates having<br>ability parameter p  | (d) Norma<br>l deviate Z<br>integer<br>, then which of  | Chi-<br>square<br>Answer<br>option   |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?  | (c) Chi-<br>square<br>ial variates having<br>ability parameter p  | (d) Norma<br>1 deviate Z<br>integer<br>, then which of  | Chi-<br>square<br>Answer<br>option<br>(c)  |  |  |  |
| 55                       | <ul> <li>(a) Student's t</li> <li>If X and Y are two i parameters m and n the following statem</li> <li>i. m+n-X-Y ha</li> <li>ii. The condition</li> </ul>  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-   | (c) Chi-<br>square<br>ial variates having<br>ability parameter p<br>ution.  | (d) Norma<br>1 deviate Z<br>integer<br>, then which of  | Chi-<br>square<br>Answer<br>option<br>(c)  |  |  |  |
| 55                       | <ul> <li>(a) Student's t</li> <li>If X and Y are two is parameters m and n the following statem i. m+n-X-Y ha ii. The condition hypergeometric</li> </ul>  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of   | <ul> <li>(c) Chi-<br/>square</li> <li>ial variates having<br/>ability parameter p</li> <li>ation.</li> <li>X given the sum X</li> </ul>   | (d) Norma<br>1 deviate Z<br>integer<br>, then which of<br>T+Y is  | Chi-<br>square<br>Answer<br>option<br>(c)  |  |  |  |
| 55                       | <ul> <li>(a) Student's t</li> <li>If X and Y are two i parameters m and n the following statem</li> <li>i. m+n-X-Y ha</li> <li>ii. The condition hypergeometric.</li> <li>iii The condition</li> </ul>   | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>Is binomial distribu-<br>nal distribution of  | <ul> <li>(c) Chi-square</li> <li>ial variates having ability parameter putton.</li> <li>X given the sum X</li> </ul>  | (d) Norma<br>1 deviate Z<br>integer<br>, then which of<br>-+Y is<br>ain a binomial  | Chi-<br>square<br>Answer<br>option<br>(c)  |  |  |  |
| 55                       | <ul> <li>(a) Student's t</li> <li>If X and Y are two is parameters m and n the following statem i. m+n-X-Y ha ii. The condition hypergeometric.</li> <li>iii. The condition distribution</li> </ul>  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of<br>onal distribution of   | <ul> <li>(c) Chi-square</li> <li>ial variates having ability parameter pation.</li> <li>X given the sum X</li> <li>X given X+Y is ag</li> </ul>   | (d) Norma<br>1 deviate Z<br>integer<br>, then which of<br>T+Y is<br>ain a binomial  | Chi-<br>square<br>Answer<br>option<br>(c)  |  |  |  |
| 55                       | <ul> <li>(a) Student's t</li> <li>If X and Y are two i parameters m and n the following statem i. m+n-X-Y ha ii. The condition hypergeometric. iii. The condition distribution.</li> <li>a. (i) is only</li> </ul>   | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>us binomial distribu-<br>onal distribution of<br>onal distribution of   | <ul> <li>(c) Chisquare</li> <li>ial variates having ability parameter parameter parameter parameter for the sum X given the sum X given X+Y is ag</li> <li>(c) (i) and</li> </ul>   | (d) Norma<br>1 deviate Z<br>integer<br>, then which of<br>(+Y is<br>ain a binomial<br>d. (i) and  | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)   |  |  |  |
| 55                       | <ul> <li>(a) Student's t</li> <li>If X and Y are two is parameters m and n the following statem i. m+n-X-Y ha ii. The condition hypergeometric.</li> <li>iii. The condition distribution.</li> <li>a. (i) is only true</li> </ul>  | <ul> <li>(b) Snedeco</li> <li>r's F</li> <li>ndependent binom</li> <li>and the same prob</li> <li>nents is/are true?</li> <li>as binomial distribution of</li> <li>onal distribution of</li> <li>b. (ii) is</li> <li>only true</li> </ul>  | <ul> <li>(c) Chisquare</li> <li>ial variates having ability parameter pation.</li> <li>X given the sum X</li> <li>X given X+Y is ag</li> <li>c. (i) and (ii) are true</li> </ul>  | <ul> <li>(d) Norma</li> <li>1 deviate Z</li> <li>integer</li> <li>, then which of</li> <li>7+Y is</li> <li>ain a binomial</li> <li>d. (i) and</li> <li>(iii) are true</li> </ul>  | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true   |  |  |  |
| 55                       | <ul> <li>(a) Student's t</li> <li>If X and Y are two is parameters m and n the following statem i. m+n-X-Y ha ii. The condition hypergeometric.</li> <li>iii. The condition distribution.</li> <li>a. (i) is only true</li> <li>Let X and Y be two</li> </ul>  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of<br>onal distribution of<br>b. (ii) is<br>only true<br>independent binor   | <ul> <li>(c) Chi-square</li> <li>ial variates having ability parameter pation.</li> <li>X given the sum X</li> <li>X given X+Y is ag</li> <li>c. (i) and (ii) are true</li> <li>nial variates with patients</li> </ul>  | (d)Norma1 deviate Zinteger, then which of(+Y is(ain a binomial)d.(i) and(iii) are truearameters (n)   | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true<br>Answer   |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem<br>i. $m+n-X-Y$ ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ and $(n_2, n_2)$ respect  | <ul> <li>(b) Snedeco</li> <li>r's F</li> <li>ndependent binom</li> <li>and the same prob</li> <li>nents is/are true?</li> <li>as binomial distribution of</li> <li>and distribution of</li> <li>b. (ii) is</li> <li>only true</li> <li>independent binom</li> <li>ectively then X+Y</li> </ul> | <ul> <li>(c) Chisquare</li> <li>ial variates having ability parameter pation.</li> <li>X given the sum X</li> <li>X given X+Y is ag</li> <li>c. (i) and (ii) are true</li> <li>nial variates with pair and the sum X</li> </ul>   | <ul> <li>(d) Norma<br/>1 deviate Z</li> <li>integer</li> <li>, then which of</li> <li>x+Y is</li> <li>ain a binomial</li> <li>d. (i) and<br/>(iii) are true</li> <li>arameters (n<sub>1</sub>, re with</li> </ul>   | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true<br>Answer<br>option   |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two is<br>parameters m and n<br>the following statem<br>i. $m+n-X-Y$ ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ and $(n_2, p_2)$ responses   | <ul> <li>(b) Snedeco</li> <li>r's F</li> <li>ndependent binom</li> <li>and the same prob</li> <li>nents is/are true?</li> <li>as binomial distribution of</li> <li>and distribution of</li> <li>b. (ii) is</li> <li>only true</li> <li>independent binom</li> <li>ectively then X+Y</li> </ul> | <ul> <li>(c) Chi-square</li> <li>ial variates having ability parameter pation.</li> <li>X given the sum X</li> <li>X given X+Y is ag</li> <li>c. (i) and (ii) are true</li> <li>nial variates with p is a binomial variates</li> </ul>  | <ul> <li>(d) Norma<br/>l deviate Z</li> <li>integer</li> <li>, then which of</li> <li>+Y is</li> <li>ain a binomial</li> <li>d. (i) and<br/>(iii) are true</li> <li>arameters (n<sub>1</sub>, se with</li> </ul>  | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true<br>Answer<br>option<br>(c)  |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem<br>i. $m+n-X-Y$ ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ ) and $(n_2, p_2)$ response<br>parameters<br>a. $(n_1+n2, m_1)$   | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of<br>b. (ii) is<br>only true<br>independent binom<br>ectively then $X+Y$<br>b. $(n_1+n2$ .  | (c)Chi-<br>squareial variates having<br>ability parameter pition.X given the sum XX given X+Y is agc.(i) and<br>(ii) are truenial variates with pis a binomial variatc.( $n_1+n2$ .   | <ul> <li>(d) Norma<br/>1 deviate Z</li> <li>integer</li> <li>, then which of</li> <li>(+Y is</li> <li>ain a binomial</li> <li>d. (i) and<br/>(iii) are true</li> <li>arameters (n<sub>1</sub>, be with</li> <li>d. None</li> </ul>  | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true<br>Answer<br>option<br>(c)<br>$(n_1+n2, p)$   |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem<br>i. m+n-X-Y ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ ) and $(n_2, p_2)$ response<br>parameters<br>a. $(n_1+n_2, p_1+p_2)$  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of<br>b. (ii) is<br>only true<br>independent binom<br>ectively then $X+Y$<br>b. $(n_1+n_2, (p_1+p_2)/2)$   | (c)Chi-<br>squareial variates having<br>ability parameter pial variates having<br>ability parameter pation.X given the sum XX given X+Y is agc.(i) are truenial variates with pis a binomial variatc.(n_1+n2,<br>p) if $p1=p2=p$  | <ul> <li>(d) Norma<br/>l deviate Z</li> <li>integer</li> <li>, then which of</li> <li><i>i</i>+Y is</li> <li>ain a binomial</li> <li>d. (i) and<br/>(iii) are true</li> <li>arameters (n<sub>1</sub>, re with</li> <li>d. None<br/>of the above</li> </ul>  | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true<br>Answer<br>option<br>(c)<br>$(n_1+n2, p)$<br>if   |  |  |  |
| 55                       | (a) Student's t<br>If X and Y are two is<br>parameters m and n<br>the following statem<br>i. m+n-X-Y ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ ) and $(n_2, p_2)$ response<br>parameters<br>a. $(n_1+n_2, p_1+p_2)$   | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of<br>b. (ii) is<br>only true<br>independent binom<br>ectively then $X+Y$<br>b. $(n_1+n_2, (p_1+p_2)/2)$   | (c)Chi-<br>squareial variates having<br>ability parameter pability parameter p <td< td=""><td>(d)Norma<br/>1 deviate Zintegerinteger, then which of(i)(i)(ii)(iii)(iii)(iii)(iii)(iii)(iii)(iiii)<td>(c)<br/>Chi-<br/>square<br/>Answer<br/>option<br/>(c)<br/>(i) and (ii)<br>are true<br>Answer<br>option<br/>(c)<br/><math>(n_1+n2, p)</math><br/>if<br/>p1=p2=p</br></br></br></td></td></td<> | (d)Norma<br>1 deviate Zintegerinteger, then which of(i)(i)(ii)(iii)(iii)(iii)(iii)(iii)(iii)(iiii) <td>(c)<br/>Chi-<br/>square<br/>Answer<br/>option<br/>(c)<br/>(i) and (ii)<br>are true<br>Answer<br>option<br/>(c)<br/><math>(n_1+n2, p)</math><br/>if<br/>p1=p2=p</br></br></br></td> | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>   |  |  |  |
| 55<br>56<br>57           | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem<br>i. m+n-X-Y ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ ) and $(n_2, p_2)$ response<br>parameters<br>a. $(n_1+n_2, p_1+p_2)$<br>Let X and Y be two  | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob-<br>nents is/are true?<br>as binomial distribu-<br>nal distribution of<br>b. (ii) is<br>only true<br>independent binom<br>ectively then $X+Y$<br>b. $(n_1+n_2, (p_1+p_2)/2)$<br>independent Poiss                                | (c)Chi-<br>squareial variates having<br>ability parameter pial variates having<br>ability parameter pability para   | (d)Norma<br>1 deviate Zintegerinteger, then which ofinteger, then which ofintegerintegerinteger, then which ofintegerinteg  | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true<br>Answer<br>option<br>(c)<br>$(n_1+n2, p)$<br>if<br>p1=p2=p<br>Answer                          |  |  |  |
| 55<br>56<br>57           | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem<br>i. m+n-X-Y ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ and $(n_2, p_2)$ response<br>parameters<br>a. $(n_1+n_2, p_1+p_2)$<br>Let X and Y be two<br>distribution of X give                    | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of<br>b. (ii) is<br>only true<br>independent binom<br>ectively then $X+Y$<br>b. $(n_1+n_2, (p_1+p_2)/2)$<br>independent Poiss<br>yen X+Y is                  | (c)Chi-<br>squareial variates having<br>ability parameter pial variates having<br>ability parameter pation.X given the sum XX given X+Y is agc.(i) and<br>(ii) are truenial variates with pis a binomial variatec.( $n_1+n2$ ,<br>p) if $p1=p2=p$ on variates. Then the   | (d)Norma<br>l deviate Zintegerinteger, then which ofI + Y isain a binomiald. (i) and<br>(iii) are truearameters (n1,<br>re withd. None<br>of the abovehe conditional  | (c)<br>Chi-<br>square<br>Answer<br>option<br>(c)<br>(i) and (ii)<br>are true<br>Answer<br>option<br>(c)<br>$(n_1+n2, p)$<br><i>if</i><br>p1=p2=p<br>Answer<br>option         |  |  |  |
| 55<br>56<br>57           | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem<br>i. m+n-X-Y ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ ) and $(n_2, p_2)$ responses<br>parameters<br>a. $(n_1+n_2, p_1+p_2)$<br>Let X and Y be two<br>distribution of X given                | (b) Snedeco<br>r's F<br>ndependent binom<br>and the same prob<br>nents is/are true?<br>as binomial distribu-<br>onal distribution of<br>b. (ii) is<br>only true<br>independent binom<br>ectively then $X+Y$<br>b. $(n_1+n_2, (p_1+p_2)/2)$<br>independent Poiss<br>yen X+Y is                  | (c)Chi-<br>squareial variates having<br>ability parameter pability parameter p <td< td=""><td>(d)Norma<br/>1 deviate Zintegerinteger, then which ofain a binomiald.(i) and(iii) are truearameters (n1,<br/>re withd.None<br/>of the abovehe conditional</td><td>(c)<br/>Chi-<br/>square<br/>Answer<br/>option<br>(c)<br>(i) and (ii)<br/>are true<br/>Answer<br/>option<br/>(c)<br/><math>(n_1+n2, p)</math><br/>if<br/>p1=p2=p<br/>Answer<br/>option<br/>(a)</br></br></td></td<>   | (d)Norma<br>1 deviate Zintegerinteger, then which ofain a binomiald.(i) and(iii) are truearameters (n1,<br>re withd.None<br>of the abovehe conditional  | (c)<br>Chi-<br>square<br>Answer<br>option<br>  |  |  |  |
| 55         56         57 | (a) Student's t<br>If X and Y are two i<br>parameters m and n<br>the following statem<br>i. m+n-X-Y ha<br>ii. The condition<br>hypergeometric.<br>iii. The condition<br>distribution.<br>a. (i) is only<br>true<br>Let X and Y be two<br>$p_1$ ) and $(n_2, p_2)$ responses<br>parameters<br>a. $(n_1+n_2, p_1+p_2)$<br>Let X and Y be two<br>distribution of X given<br>a. Binomial | (b)Snedecor's Fndependent binomand the same proband the same probnents is/are true?as binomial distributionand distribution ofanal distribution ofb.(ii) isonly trueindependent binomectively then $X+Y$ b.b. $(p1+p2)/2)$ independent Poissyen X+Y isb.poisson                                | (c)Chi-<br>squareial variates having<br>ability parameter pial variates having<br>ability parameter pability parameter pc.(i) and(ii) are truenial variates with pis a binomial variatec.(n_1+n2, p) if p1=p2=pon variates. Then thec.c.Negative  | (d)Norma<br>1 deviate Zintegerinteger, then which ofinteger, then which ofintegerintegerinteger, then which ofintegerinteg  | (c)Chi-<br>squareAnswer<br>option(c)(i) and (ii)<br>are true(i) and (ii)<br>are trueAnswer<br>option<br>(c) $(n_1+n2, p)$<br>if<br>$p1=p2=p$ Answer<br>option<br>(a)Binomial |  |  |  |

| 58 | Match the types of a random variable X with the specific nature of its   |                                |  |                        |   |                            |  |
|----|--|--------------------------------|--|------------------------|---|----------------------------|--|
|    | cumulative distribut   | ion functions.                 |  |                        |   |                            |  |
|    | Type of R.V.   |                                | Nature   | of cdf                 |   | <b>A</b>                   |  |
|    | A. Discrete  |                                | I. A   | Absolutely co          | ontinuous                                     | option                     |  |
|    | B. Continuous  |                                | II. I  | ncreases by            | jump only                                     | (d)                        |  |
|    | C. Partially disc  | crete, partially               | III. I<br>continuc                                 | ncreases by ously also | jump and                                      |                            |  |
|    | a. (A-I), (B-  | b. (A-III)                     | ), C.  | (A-II),                | d. (A-II),                                    | (A-II), (B-                |  |
|    | II), (C-III)   | (B-I), (C-II)                  | (B-III   | I), (C-I)              | (B-I), (C-III)                                | I), (C-III)                |  |
| 59 | A continuous rando   | m variable X ha                | is the dist  | ribution func          | tion  | A                          |  |
|    |  | F(r) - kr                      | $\begin{array}{ccc} 0, & x < \\ 0 < r \end{array}$ | 0                      |   | ontion                     |  |
|    |  | $\Gamma(\chi) = \kappa \chi$   | 1. x > 1   | 1                      |   | (d)                        |  |
|    | The value of <i>k</i> is   |                                | 1, 7, 7  | 1                      |   | (u)                        |  |
|    | a. <sup>1</sup> / <sub>2</sub>   | b. <sup>1</sup> / <sub>4</sub> | с.   | 2                      | d. 1  | 1                          |  |
| 60 | Suppose $X_1$ and $X_2$ a  | are independent                | exponent   | ial variates e         | each having                                   | Answer                     |  |
|    | mean $\theta$ . Then the co  | onditional distri              | bution of .  | $X_2$ given $X_1$ +    | $X_2 = t$ is                                  | option                     |  |
|    | (a) Europontia   | (b) Even                       | 2 (2)  | Liniform               | (d) Unifor                                    | (c)                        |  |
|    | (a) Exponentia 1 with mean $t/2$   | (b) Expon                      | e (c)  | t)                     | (d) Unifor<br>m on $(0, t, \theta)$           | Uniform                    |  |
|    |  | $t \theta/2$                   |  | , .)                   | $\lim \operatorname{On}\left(0,  i  0\right)$ | on ( <i>0</i> , <i>t</i> ) |  |
| 61 | The average marks of 100 students at a certain examination is 66 and the |                                |  |                        |   |                            |  |
|    | variance is 64. Assu   | ming that the m                | narks are r  | normally dist          | tributed, the                                 | option                     |  |
|    | number of students   | getting marks b                | etween 50  | ) and 82, is a         | pproximately                                  | (c)                        |  |
|    | a. 68  | b. 90                          | с.   | 95                     | d. 99   | 95                         |  |
| 62 | Let X be a random v  | variable with P                | (X=x)=   | = k(x + 1);            | x = 0, 1, 2 & 3.                              | Answer                     |  |
|    | The value of k is  |                                |  |                        |   | option                     |  |
|    | a 10   | b 1/4                          | C  | 1/10                   | d 1/6   | 1/10                       |  |
| 63 | The distribution fun   | ction (DF) of a                | n absolute   | lv continuou           | us DF of a                                    | Answer                     |  |
|    | random variable alw  | vays                           |  | -,                     |   | option                     |  |
|    |  |                                |  |                        |   | (b)                        |  |
|    | a. Normal  | b. Unifor                      | m c.<br>first k                                    | Beta of<br>kind        | d. Not<br>defined                             | Uniform                    |  |
| 64 | The joint pmf of two   | o random varial                | oles, X an   | d Y is <i>f(x,y)</i> = | =kxy; x,y=0, 1,                               | Answer                     |  |
|    | <i>2</i> , <i>3</i> . The value of <i>k</i>                              | is                             |  |                        |   | option                     |  |
|    | 1/0  | 1 1/16                         |  | 1/10                   | 1 1/26  | (d)                        |  |
| 65 | a. $1/9$   | D. 1/16                        | C.   | 1/12                   | $d. \frac{1}{36}$                             | 1/36                       |  |
| 03 | The Kao-Cramer lov<br>$N(u, \sigma^2)$ population                        | wer bound for a                | n unoiase  | u estimator (          | $\sigma \sigma n a$                           | ontion                     |  |
|    | $\mu(\mu, \sigma)$ population  | $\mu$ is kilo                  | wii, 15  |                        |   | (c)                        |  |
|    | $\sigma^4$   | h $\sigma^4$                   | 2  | $2\sigma^4$            | d. None                                       | $2\sigma^4$                |  |
|    | a. $\overline{n}$  | $\frac{1}{2n}$                 | С.   | n                      | of the above                                  | $\frac{1}{n}$              |  |
| 66 | If $T_1$ is an unbiased  | estimator of a p               | arameter   | and $T_2$ is a s       | ufficient                                     | Answer                     |  |
|    | statistic for the same   | e parameter, the               | n the best   | statistic in t         | he sense of                                   | option                     |  |
|    | variance is  | 1                              | 1  |                        | 1   | (c)                        |  |
|    | a. <i>T</i> <sub>1</sub>   | b. <i>T</i> <sub>2</sub>       | с.   | $E(T_1 T_2)$           | d. $E(T_2 T_1)$                               | $E(T_1 T_2)$               |  |
| 67 | Choose the correct s   | statements.                    | <b>.</b> .   | 0.7-                   |   | Answer                     |  |
|    | A. The type I er   | rror is caused by              | y rejection  | n of $H_0$ when        | 1 is true                                     | option                     |  |

|    | В.<br>С.  | B. The type II error is caused by acceptance of $H_0$ when $H_1$ is true C. The principle of Neyman-Pearson gives equal weights to both |                       |                          |   |                   |                                  | s true<br>both       | (b)          |
|----|---|---|-----------------------|--------------------------|---|-------------------|----------------------------------|----------------------|--------------|
|    | these e   | rrors   |                       |                          |   |                   |                                  |                      |              |
|    | a.  | All the   | b. A                  | A and B                  | c.                                      | B and C           | d.                               | A and                | A and B      |
| 60 | three   |   | are true              |                          | are tru                                 | e                 | C are t                          | rue                  | are true     |
| 68 | If $\lambda$ is 1   | the likelihood  | ratio crite           | erion, the               | asymp                                   | totic distrib     | ution of                         | -2log <sub>e</sub> λ | Answer       |
|    | 15  |   |                       |                          |   |                   |                                  |                      | option       |
|    | 0   | Data of 1st   | <u>ь</u> х            |                          | 2                                       | Data of           | 4                                | Chi                  |              |
|    | a.<br>kind  | Beta of 1   | <b>D</b> . <b>P</b>   | vormai                   | C.<br>2 <sup>nd</sup> lein              | Bela OI           | a.                               | Cni-                 | Cni-         |
| 60 | Which   | of the follow   | ing islara            | not true?                |   | u                 | square                           |                      | square       |
| 07 | (i)   | All estimator   | ng 15/arc             | istics                   |   |                   |                                  |                      | Answer       |
|    | (i)<br>(ii)   | (ii) All statistics are estimators  |                       |                          |   |                   |                                  | ontion               |              |
|    | (iii)   | The terms es  | timators a            | and estim                | ates are                                | svnonvms          |                                  |                      | (b)          |
|    | (iv)  | An estimate   | is the true           | e value of               | an esti                                 | mator             |                                  |                      |              |
|    | a.  | (i), (iii) &  | b. (:                 | ii) &                    | с.                                      | (i), (ii)&        | d.                               | (ii)                 | (ii) & (iii) |
|    | (iv) on   | ly  | (iii) only            | 7                        | (iii) or                                | ıly               | only                             |                      | only         |
| 70 | Let (X  | 1, X2) be two   | independ              | lent obse                | rvations                                | from a Ber        | moulli                           |                      | Answer       |
|    | distrib   | ution with par  | ameter $\theta$ .     | Which o                  | ne of th                                | e following       | g statisti                       | c is not             | option       |
|    | unbias  | ed for $\theta$ ?   |                       |                          |   |                   |                                  |                      | (c)          |
|    | a.  | $T_1 = X_1$   | b. 7                  | $r_2 =$                  | c.                                      | $T_{3} =$         | d.                               | $T_4 =$              | $T_3$        |
|    |   |   | $\frac{x_1 + x_2}{2}$ |                          | $X_1X_2$                                |                   | $2X_1 -$                         | $X_2$                | $= X_1 X_2$  |
| 71 | Consid  | ler the follow  | ing statem            | nents.                   |   |                   |                                  |                      | <b>A</b>     |
|    | A. $T_n$ is a consistent estimator of $\theta$ .            |   |                       |                          |   |                   |                                  |                      | Answer       |
|    | B. $E(T_n) \to \theta$ and $V(T_n) \to 0$ as $n \to \infty$ |   |                       |                          |   |                   |                                  | (b)                  |              |
|    | The correct statement is                                    |   |                       |                          |   |                   | (0)                              |                      |              |
|    | a.  | A implies   | b. E                  | 3                        | с.                                      | A and B           | d.                               | None                 | B implies    |
|    | B but I   | 3 does not  | implies A             | A but A                  | implie                                  | s each            | of A ar                          | nd B                 | A but A      |
|    | imply .   | A   | does not              | imply                    | other                                   |                   | implies                          | s the                | does not     |
| 72 | L at V  | and V have in   | B<br>int ndf f(x      | (-1) - 2                 | 0~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | < 1 L at $a = I$  | $\frac{\text{other}}{V V V - I}$ | (2) and              |              |
| 12 | b = V(Y)  | 1X = 1/2 Then   | (a, b) is             | <i>x</i> , <i>y</i> )−2, | 0 < x < y                               | >1. Let $u-t$     | L(I A-I)                         | <i>/2)</i> and       | ontion       |
|    | 0 /(1   | <i>[21 1/2]</i> . The   | 1(u, 0) 13            |                          |   |                   |                                  |                      | (a)          |
|    | a.  | (3/4, 1/48)   | b. (                  | 1/4.                     | C.                                      | (1/4,             | d.                               | (3/4.                |              |
|    |   | (   | 1/48)                 | ,                        | 7/12)                                   | (;                | 7/12)                            | ()                   | (3/4, 1/48)  |
| 73 | The pu  | rpose served  | by diagra             | ms and c                 | harts is:                               |                   |                                  |                      | d)           |
|    | a)  | simple  | b) to                 | avoid                    | c) t                                    | o avoid           | d) all                           |                      |              |
|    | presen  | tation of   | tabulatio             | n                        | textua                                  | form              |                                  |                      | all          |
|    | data  |   |                       |                          |   |                   |                                  |                      |              |
| 74 | Which   | of the follow   | ing staten            | nents are                | true for                                | arithmetic        | mean?                            |                      |              |
|    | A.<br>D   | It is not affect  | ted by ex             | treme va                 | lues.                                   |                   |                                  |                      |              |
|    | Б.<br>С   | It is based or  | alculate.             | votions                  |   |                   |                                  |                      | b)           |
|    | C.<br>D   | It is rigidly d   | all obser             | vations.                 |   |                   |                                  |                      |              |
|    | D.  | it is rigitily t  | enneu.                |                          |   |                   |                                  |                      |              |
|    | a) A-T  | ure, B-True   | b) A-Fa               | lse. B-                  | c) A-                                   | False. <b>B</b> - | d) A-7                           | rue. R-              | A-False      |
|    | C-True  | e. D-True   | True.                 | C-True.                  | True. (                                 | C-True. D-        | True.                            | C-True.              | B-True,      |
|    |   | -   | D-True                | ,                        | False                                   | , –               | D-Fals                           | e                    | C-True,      |
|    |   |   |                       |                          |   |                   |                                  |                      | D-True       |
| 75 | Consid  | ler the Asserti   | on (A) an             | d Justific               | ation (I                                | B) given bel      | ow:                              |                      |              |
|    | A: Ass  | ertion: A goo   | d measure             | e of dispe               | ersion n                                | eeds to be l      | east affe                        | ected by             | b)           |
|    | the cha   | inge in the same  | npling.               |                          |   |                   |                                  |                      |              |

|            | B: Justification: Standard dev  | dispersion   |  |  |  |  |  |
|------------|---|--|--|--|--|--|--|
|            | Choose the correct ans  | ower from the code   | given below:   |  |  |  |  |
|            | a) Both statements b)<br>are true, and (B) is statement<br>the correct true, but<br>explanation of (A). not the<br>explanat<br>(A). | Both<br>its are<br>t (B) isc) Statement (A)<br>is<br>strue, but<br>Statement (B) is<br>false.correct<br>ion of | <ul><li>d) Statement</li><li>(B) is true, but,</li><li>Statement (A)</li><li>is false.</li></ul>   | Both<br>statements<br>are true,<br>but (B) is<br>not the<br>correct<br>explanatio<br>n of (A). |  |  |  |
| 76         | from List II.   |  |  |  |  |  |  |
|            | List I<br>A. Geographical<br>classification   | List II<br>i. According to<br>magnitude of the nu<br>values, e.g., age i<br>height, etc                        | the<br>merical<br>ncome,   |  |  |  |  |
|            | <ul> <li>B. Chronological classification</li> <li>C. Qualitative classification.</li> </ul>   | ii. According to<br>area, or region.<br>iii. According to th<br>of time, e.g., monthly,<br>etc.                | <ul> <li>ii. According to place,<br/>area, or region.</li> <li>iii. According to the lapse<br/>of time, e.g., monthly, yearly,<br/>etc.</li> </ul> |  |  |  |  |
|            | D. Quantitative classification  | iv. According to<br>attributes of the subj<br>items, e.g., sex, qualif<br>colour, etc.                         | o the<br>ects or<br>ication,   |  |  |  |  |
| 77         | a) A-ii, B-iii, C-iv, b) A-ii, D-ii<br>D-i i, D-iii   | B-iv, C- c) A-ii, B-i, C-iv,<br>D-iii  | d) A-iii, B-ii,<br>C-iv, D-i   | A-ii, B-iii,<br>C-iv, D-i  |  |  |  |
|            | The frequency curve of the da   | ata is given below:  | 6  | a)   |  |  |  |
| <b>7</b> 0 | a) 2.75, 2 b) 3, 2  | a) 3, 2.57   | b) 2.57, 3   | a) 2.75, 2   |  |  |  |
| 78         | It two events A and B are s<br>conditional probabilities P(A/   | such that $A \subset B$ , the relation $C$ and $P(B/C)$ is   | on between the   | a)   |  |  |  |
|            | a) $P(A/C) < P$ b) $P(A/C)$<br>(B/C) (B/C)  | C) > P   c) P(A/C) = P   (B/C)   | d) $P(A/C) \ge P$<br>(B/C)   | $\overline{P(A/C)} < P(B/C)$   |  |  |  |

| 79  | <ul> <li>Which of the follow</li> <li>A. The probabil</li> <li>B. The probabil</li> <li>C. The probabil</li> <li>D. The probabil</li> <li>0.04.</li> <li>a) A-True, B-True,</li> <li>C-True, D-False</li> </ul>   | ing statement<br>ity of an even<br>ity of an even<br>ity of occurred<br>ity of picking<br>b) A-True,<br>True, C-Fa<br>D-False | ts are<br>nt wil<br>nt can<br>ence o<br>g an e<br>B-<br>alse, | true for probability<br>l be greater than 0<br>be greater than on<br>of a sure event is 1.<br>even prime from nu<br>c) A-False, B-<br>False, C-True,<br>D-False | <ul> <li>7?</li> <li>and less t</li> <li>e also.</li> <li>mbers 1 t</li> <li>d) A-Fa</li> <li>False, 0</li> <li>D-True</li> </ul> | to 25 is<br>llse, B-<br>C-True, | d)<br>A-False,<br>B-False,<br>C-True,  |
|-----|---|---|---|---|---|---------------------------------|--|
| 0.0 |   |   |   |   |   |                                 | D-True   |
| 80  | <ul> <li>A: Assertion: The probability of an event that cannot happen or which is impossible, is equal to zero.</li> <li>B: Justification: The probability lies between 0 and 1. Hence, it cannot be negative.</li> <li>Choose the correct answer from the code given below:</li> </ul> |   |   |   |   |                                 | b)   |
|     |   |   |   |   | 0   |                                 |  |
|     | a) Both statements<br>are true, and (B) is<br>the correct<br>explanation of (A).  | b) Both<br>statements are<br>true, but (B) is<br>not the correct<br>explanation of<br>(A).                                    |   | c) Statement (A)<br>is true, but<br>Statement (B) is<br>false.  | d) Sta<br>(B) is tr<br>Stateme<br>is false.   | ttement<br>ue, but,<br>ent (A)  | Both<br>statements<br>are true,<br>but (B) is<br>not the<br>correct<br>explanatio<br>n of (A). |
| 81  | Given the joint p.m given by the relation   | .f. <i>p(x,y),</i> tł<br>n:   | ne con  | nditional p.m.f. of   | Y given   | X=x is                          | a)   |
|     | a) $p_{Y/X}(y/x) =$<br>$\frac{p_{X,Y}(x,y)}{p_X(x)}$  | b) $p_{Y/X}(y/x)$<br>$\frac{p_X(x)}{p_Y(y)}$  | () =  | c) $p_{Y/X}(y/x) =$<br>$\frac{p_X(x)}{p_Y(y)}$  | d) $p$<br>x) =<br>$\frac{p_{X,Y}(x,y)}{p_X(x)p_Y(x)}$   | $\frac{y}{y}$                   | $p_{Y/X}(y) = \frac{p_{X,Y}(x,y)}{p_X(x)}$   |
| 82  | Match List I and Lis  | st II and choo  | se the  | e correct answer.   |   |                                 |  |
|     | List IA. The simple linear<br>regression model of Y on X isB. The estimated equation<br>of the simple linear regression<br>model of Y on X isC. The term regression   |   |   | List II<br>$\hat{Y} = \hat{\beta}_o + \hat{\beta}_1 X$<br>$Y = \beta_0 + \beta_1 X + \varepsilon$<br>Carl Friedish Gauss  |   |                                 | b)   |
|     | D. The term I<br>(LS) method was<br>by  | Least square<br>introduced  | iv.   | Sir Francis Gal   | ton   |                                 |  |
| 02  | a) A-ii, B-iii, C-iv,<br>D-i  | b) A-ii, B-i<br>iv, D-iii   | , C-  | c) A-ii, B-i, C-<br>iii, D-iv   | d) A-ii,<br>iii, D-iv   | B-1, C-                         | A-ii, B-i,<br>C-iv, D-iii  |
| 83  | Consider the Asserti  | on $(A)$ and $J_{1}$  | ustitio   | cation (B) given be   | low:  |                                 | a)   |

|    | Assertion A: If X and Y are uncorrelated then they are independent.  |  |  |  |  |  |
|----|--|--|--|--|--|--|
|    | Justification B: If X and Y are independent then they are uncorrelated.<br>Choose the correct answer from the code given below:  |  |  |  |  |  |
|    | a) Both statements<br>are true, and (B) is<br>the correct<br>explanation of (A).   | b) Both<br>statements are<br>true, but (B) is<br>not the correct<br>explanation of<br>(A).   | c) Statement (A)<br>is true, but<br>Statement (B) is<br>false.   | d) Statement<br>(B) is true, but,<br>Statement (A)<br>is false.  | Statement<br>(B) is<br>true, but,<br>Statement<br>(A) is<br>false. |  |
| 84 | A sample consists of   | f:   |  |  | d)   |  |
|    | a) all units of the population   | b) 50 per cent<br>units of the<br>population   | c) 5 per cent<br>units of the<br>population  | d) any fraction<br>of the<br>population  | any<br>fraction of<br>the<br>populatio<br>n                        |  |
| 85 | The correlation coet (2, 5), (3, 4), (4, 3),   | fficient of the follo $(5, 2), (6, 1)$ is:   | wing 6 observation   | ns (X, Y): (1, 6),   | c)   |  |
|    | a) 0   | b) 1   | c) -1  | d) 0.5   | -1   |  |
| 86 | In a regression line   | of Y on X, the vari  | able X is known as   |  | d)   |  |
|    | a) independent variable  | b) regressor   | c) explanatory variable  | d) all   | all  |  |
| 01 | A. The distribution function is also often called the <b>cumulative</b><br><b>distribution function.</b><br>B. If X is a random variable, its distribution function is $F(x) = P(X \ge x)$ .<br>C. $F(x)$ is increasing i.e., $F(x_1) < F(x_2)$ if $x_1 < x_2$ .<br>D. $\lim F(x) = 1$ . |  |  |  |  |  |
|    | A. The distribution function<br>distribution function<br>B. If X is a rand<br>$P(X \ge x)$ .<br>C. $F(x)$ is increased<br>D. $\lim_{x\to\infty} F(x) = 0$  | tion function is<br>on.<br>adom variable, its<br>easing i.e., $F(x_1) < 1$ .   | also often called<br>s distribution func<br>$\langle F(x_2)$ if $x_1 < x_2$  | the <b>cumulative</b> extreme tion is $F(x) =$   | b)   |  |
|    | A. The distribution function<br><b>distribution function</b><br>B. If X is a rangent $P(X \ge x)$ .<br>C. $F(x)$ is increased<br>D. $\lim_{x \to \infty} F(x) = x$<br>a) A-True, B-True,<br>C-True, D-True   | ttion function is<br><b>on.</b><br>adom variable, its<br>easing i.e., $F(x_1) < 1$ .<br>b) A-True, B-<br>False, C-True,<br>D-True  | also often called<br>s distribution func<br>$\langle F(x_2)$ if $x_1 < x_2$<br>c) A-True, B-<br>True, C-False,<br>D-True   | the <b>cumulative</b><br>etion is $F(x) =$<br>d) A-True, B-<br>True, C-True,<br>D-False  | b)<br>A-True,<br>B-False,<br>C-True,<br>D-True                     |  |
| 88 | A. The distribution function<br>distribution function<br>B. If X is a rand<br>$P(X \ge x)$ .<br>C. $F(x)$ is increated<br>D. $\lim_{x\to\infty} F(x) = x$<br>a) A-True, B-True,<br>C-True, D-True<br>A paired data set has<br>The value of the reg                                       | tion function is<br>on.<br>adom variable, its<br>easing i.e., $F(x_1) < 1$ .<br>b) A-True, B-<br>False, C-True,<br>D-True<br>$sn=5, \Sigma x = 15, \Sigma$<br>pression coefficient               | also often called<br>s distribution func<br>$< F(x_2)$ if $x_1 < x_2$<br>c) A-True, B-<br>True, C-False,<br>D-True<br>$y = 27, \sum xy = 10$<br>of y on x is                       | the <b>cumulative</b><br>etion is $F(x) =$<br>d) A-True, B-<br>True, C-True,<br>D-False<br>00 and $\sum x^2 = 55$ .            | b)<br>A-True,<br>B-False,<br>C-True,<br>D-True<br>b)               |  |
| 88 | A. The distribution function<br>distribution function<br>B. If X is a rand<br>$P(X \ge x)$ .<br>C. $F(x)$ is increated<br>D. $\lim_{x\to\infty} F(x) = x$<br>a) A-True, B-True,<br>C-True, D-True<br>A paired data set has<br>The value of the reg<br>a) 19                              | ation function is<br>on.<br>adom variable, its<br>easing i.e., $F(x_1) < 1$ .<br>b) A-True, B-<br>False, C-True,<br>D-True<br>$x_1 = 5, \Sigma x = 15, \Sigma$<br>pression coefficient<br>b) 1.9 | also often called<br>s distribution func<br>$\langle F(x_2) \text{ if } x_1 < x_2$<br>c) A-True, B-<br>True, C-False,<br>D-True<br>$y = 27, \sum xy = 10$<br>of y on x is<br>c) -1 | the <b>cumulative</b><br>etion is $F(x) =$<br>d) A-True, B-<br>True, C-True,<br>D-False<br>200 and $\sum x^2 = 55$ .<br>d) 0.5 | b)<br>A-True,<br>B-False,<br>C-True,<br>D-True<br>b)<br>1.9        |  |

|    | a) Both statements   | b) Both               | c) Statement (A)      | d) Statement       | Both       |  |  |  |
|----|--|-----------------------|-----------------------|--------------------|------------|--|--|--|
|    | are true, and (B) is   | statements are        | is true, but          | (B) is true, but,  | statements |  |  |  |
|    | the correct  | true, but (B) is      | Statement (B) is      | Statement (A)      | are true,  |  |  |  |
|    | explanation of (A).  | not the correct       | false.                | is false.          | and (B) is |  |  |  |
|    |  | explanation of        |                       |                    | the        |  |  |  |
|    |  | (Å).                  |                       |                    | correct    |  |  |  |
|    |  |                       |                       |                    | explanatio |  |  |  |
|    |  |                       |                       |                    | n of (A).  |  |  |  |
| 90 | Which of the following statements are true?  |                       |                       |                    |            |  |  |  |
|    | Λ There are ma   | ny sources of data    |                       |                    |            |  |  |  |
|    | R Telephone su   | ryev is the most sui  | table method of coll  | ecting data when   |            |  |  |  |
|    | the nonulation is liter  | rate and spread over  | a large area          | cering data when   | (b         |  |  |  |
|    | C Data collecte  | d by the investigato  | r is called the secon | darv data          | u)         |  |  |  |
|    | D There is a c   | certain bias involv   | ed in the non-rand    | lom selection of   |            |  |  |  |
|    | samples.   |                       |                       | Selection of       |            |  |  |  |
|    |  |                       |                       |                    |            |  |  |  |
|    | a) A-False, B-   | b) A-False, B-        | c) A-False, B-        | d) A-False, B-     | A-False,   |  |  |  |
|    | False, C-False, D-   | True, C-False,        | False, C-True,        | False, C-False,    | B-False,   |  |  |  |
|    | False  | D-False               | D-False               | D-True             | C-False,   |  |  |  |
|    |  |                       |                       |                    | D-True     |  |  |  |
| 91 | The Theorem which<br>Z-standard deviation  | n states the least po | ercentage of values   | s that fall within | c)         |  |  |  |
|    | a) Sampling  | b) Population         | c) Chebyshey's        | d) Pearson         | Chebyshe   |  |  |  |
|    | Theorem  | Theorem               | Theorem               | Theorem            | v's        |  |  |  |
|    |  |                       |                       |                    | Theorem    |  |  |  |
| 92 | Which of the following statements are true?  |                       |                       |                    |            |  |  |  |
|    | A. A discrete ra   | ndom variable can     | assume countable      | values.            |            |  |  |  |
|    | B. A random va   | ariable X is continu  | ous if its probabili  | ties are given by  |            |  |  |  |
|    | a probability mass f   | unction.              | 1                     | 0                  | 1)         |  |  |  |
|    | C. Continuous  | variables can assu    | ime all values betw   | ween two given     | b)         |  |  |  |
|    | values of the variable   | le.                   |                       | _                  |            |  |  |  |
|    | D. A random va   | riable X is continu   | ous if its probabili  | ties are given by  |            |  |  |  |
|    | a probability density  | y function.           |                       |                    |            |  |  |  |
|    | a) A-True, B-True,   | b) A-True, B-         | c) A-True, B-         | d) A-True, B-      | A-True,    |  |  |  |
|    | C-True, D-True   | False, C-True,        | False, C-True,        | False, C-False,    | B-False,   |  |  |  |
|    |  | D-True                | D-False               | D-True             | C-True,    |  |  |  |
|    |  |                       |                       |                    | D-True     |  |  |  |
| 93 | Consider the Assertion (A) and Justification (B) given below:  |                       |                       |                    |            |  |  |  |
|    |  |                       |                       |                    |            |  |  |  |
|    | Assertion A: The m   | noment generating     | iunction (mgf) of     | $z = x_1 + x_2 + $ |            |  |  |  |
|    | $\dots + X_n$ is the product of the mgfs of $X_1, X_2, \dots, X_n$ i.e.,   |                       |                       |                    |            |  |  |  |
|    | $M_{z}(t) = \prod^{n} M_{X_{z}}(t)$  |                       |                       |                    |            |  |  |  |
|    | $\prod_{i=1}^{n} \prod_{i=1}^{n} \prod_{i$ |                       |                       |                    |            |  |  |  |
|    | •  |                       |                       |                    |            |  |  |  |
|    | Justification B: $X_1, X_2,, X_n$ are <i>n</i> mutually independent random   |                       |                       |                    |            |  |  |  |
|    | variables.   |                       |                       |                    |            |  |  |  |
|    | Choose the correct answer from the code given below:   |                       |                       |                    |            |  |  |  |
|    | a) Both statements b) Both c) Statement (A) d) Statement   |                       |                       |                    |            |  |  |  |
|    | are true, and (B) is   | statements are        | is true, but          | (B) is true, but,  | statements |  |  |  |

|    | the co<br>explanation o  | orrect f (A).                  | true<br>not<br>expl<br>(A). | , but (B)<br>the corr<br>lanation | ) is<br>rect<br>of | Statement<br>false.  | t (B) is  | Statem<br>is false  | ent (A)   | are true,<br>and (B) is<br>the<br>correct<br>explanatio<br>n of (A). |
|----|--|--------------------------------|-----------------------------|-----------------------------------|--------------------|--|-----------|---------------------|-----------|--|
| 94 | Match List I and List II, and choose the correct answer.   |                                |                             |                                   |                    |  |           |                     |           |  |
|    |  | List I                         |                             |                                   |                    | Lis  | st II     |                     |           |  |
|    | A. If $\lambda$ random varia   | ables. 1                       | X <sub>2</sub><br>then      | are 2                             | 1.<br>E(X          | $E(X_1X_2)$  | 2) =      |                     |           |  |
|    | B. If $\lambda$  | $X_1$ and                      | <i>X</i> <sub>2</sub>       | are 2                             | ii.                | $E(X_1 + C(X_1 + C(X_$ | $(X_2) =$ |                     | _         |  |
|    | independent then   | rando                          | m vai                       | riables,                          | E(X                | $(X_1) + E(X_2)$   | )         |                     |           | c)   |
|    | C. If $X$  | is a rar                       | ndom                        |                                   | iii.               | Var(X)   | E = E(X   | <sup>2</sup> ) –    |           |  |
|    | variable and   | c is a                         | const                       | ant,                              | { <i>E</i> (.      | $X)\}^{2}$   |           |                     |           |  |
|    | D. If A  | K is                           | a r                         | andom                             | iv.                | E(cX)  | = cE(X)   | )                   | _         |  |
|    | variable, the  | n                              |                             |                                   |                    |  |           |                     |           |  |
|    |  |                                |                             |                                   |                    |  |           |                     |           |  |
|    | a) A-ii, B-i,<br>D-iv  | C-iii,                         | b) A<br>iv T                | A-i, B-ii,<br>D-iii               | C-                 | c) A-ii, B-<br>D-iii   | ·i, C-iv, | d) A-i,<br>iii D-ii | B-ii, C-  | A-ii, B-i,<br>C-iy D-iii   |
| 95 | A hotel manag  | ger is c                       | onsic                       | lering a n                        | ew                 | location for   | his hote  | el. The p           | rojected  | C 10, D III  |
|    | daily cash flo   | $\frac{\text{w for t}}{1.000}$ | he ne                       | w locatio                         | on is              | (in Rs.)   | 0.000     | 10                  | 000       |  |
|    | Cash flow 1,000 3,000 7,000 9,000 10,000   |                                |                             |                                   |                    |  |           |                     |           |  |
|    | Probability  | 0.60                           |                             | 0.10                              |                    | 0.20   | 0.05      | ?                   |           | a)   |
|    |  |                                |                             |                                   |                    |  |           |                     |           |  |
|    | The expected   | cash f                         | low f                       | or the new                        | w lo               | cation is  |           |                     |           |  |
|    | a) 3250  | a) 3250 b) 4250                |                             | 250                               |                    | c) 3750  |           | d) 4000             | )         | 3250   |
| 96 | The cumulati   | ve dis                         | tribu                       | tion fund                         | ction              | of a rand  | lom var   | iable 'x            | ' is the  | 1)   |
|    | probability th   | at X ta                        | kes tl                      | he value                          |                    |  |           |                     |           | d)   |
|    | a) zero  |                                | b) g                        | reater tha                        | n x                | c) equal to  | ох        | d) less             | than or   | less than<br>or equal  |
|    |  |                                |                             |                                   |                    |  |           | equal               | 5 A       | to x   |
| 97 | Consider the Assertion (A) and Justification (B) given below:  |                                |                             |                                   |                    |  |           |                     |           |  |
|    | Assertion A: The moment generation function of a random variable is  |                                |                             |                                   |                    |  |           |                     |           |  |
|    | $M_X(t) = e^{t\mu + \frac{1}{2}t^2\sigma^2}$   |                                |                             |                                   |                    |  |           |                     |           |  |
|    | Instituation D. The renders variable V fellows a second distribution with  |                                |                             |                                   |                    |  |           | a)                  |           |  |
|    | Justification B: The random variable $\lambda$ follows a normal distribution with mean $\mu$ and variance $\sigma^2$ . |                                |                             |                                   |                    |  |           |                     |           |  |
|    | Choose the correct answer from the code given below:   |                                |                             |                                   |                    |  |           |                     |           |  |
|    | a) Both stater   | nents                          | b)                          | В                                 | oth                | c) Statem  | ent (A)   | d) St               | atement   | Both   |
|    | are true, and  | (B) is                         | state                       | ements                            | are                | is true,   | but       | (B) is t            | rue, but, | statements   |
|    |  |                                | true                        | , but (B)                         | ) is               |  |           |                     |           | are true,  |

|    | the correct  | not the correct    | Statement (B) is   | Statement (A)   | and (B) is |  |  |
|----|--|--------------------|--------------------|-----------------|------------|--|--|
|    | explanation of (A).  | explanation of     | false.             | is false.       | the        |  |  |
|    |  | (A).               |                    |                 | correct    |  |  |
|    |  |                    |                    |                 | explanatio |  |  |
|    |  |                    |                    |                 | n of (A).  |  |  |
| 98 | If X is a continuous   | random variable,   | then find the true | statements from |            |  |  |
|    | the list below:  |                    |                    |                 |            |  |  |
|    | A. $f(x) \ge 0$ for  | r all $x \in R$    |                    |                 |            |  |  |
|    | B. $\int_{-\infty}^{\infty} f(x) dx$                                     | = 1                |                    |                 | c)         |  |  |
|    | C. $\sum_{all x} p(x) =$   | = 1                |                    |                 |            |  |  |
|    | D. $\int_a^b f(x) dx =$  | $= P(a < X \le b)$ |                    |                 |            |  |  |
|    | a) A-True, B-True,   | b) A-False, B-     | c) A-True, B-      | d) A-True, B-   | A-True,    |  |  |
|    | C-True, D-True   | True, C-True,      | True, C-False,     | False, C-True,  | B-True,    |  |  |
|    |  | D-True             | D-True             | D-True          | C-False,   |  |  |
|    |  |                    |                    |                 | D-True     |  |  |
| 99 | Let $X \sim Uniform$ (-a, a), determine 'a' such that $P( X  < 2) = 1/4$ |                    |                    |                 |            |  |  |
|    |  |                    |                    |                 | option     |  |  |
|    |  | 1                  | 1                  | 1               | (d)        |  |  |
|    | (a) 2  | (b) 4              | (c) 6              | (d) 8           | 8          |  |  |
| 10 | $\int \frac{3\pi}{4} dx$ is  | aqual to           |                    |                 | Answer     |  |  |
| 0  | $J_{\frac{\pi}{4}}$ $\frac{J_{\pi}}{1+cosx}$ is equal to                 |                    |                    |                 |            |  |  |
|    |  |                    |                    |                 | 1          |  |  |
|    | a) -2  | b) 2               | c) 4               | d) -1           | (d)        |  |  |