

E 5786

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Reg. No.....

Name.....

B.B.A. DEGREE (C.B.C.S.S.) EXAMINATION, MAY 2013

Second Semester

Complementary Course – STATISTICS FOR RESEARCH

Time : Three Hours

Maximum Weight : 25

Part A

Answer all questions.

Each bunch of four questions carries a weight of 1.

- I. 1. The probability obtained by following relative frequency definition is called _____ probability.
2. When the occurrence or non-occurrence of two events does not depend on each other, they are called _____.
3. If two events A and B are dependent, the conditional probability of B given A, i.e. $P(B/A)$ is calculated as _____.
4. Random sampling is also referred to as _____ sampling.
- II. 5. _____ errors are likely to be more in the case of census.
6. Type II errors are made when we accept a null hypothesis which is _____.
7. The distribution formed of all possible values of a statistic is called the _____.
8. The Chi-square test should not be applied if N is less than _____.
- III. 9. The Chi-square test is one of the simplest and most widely used _____ tests.
10. The technique of analysis of variance was developed by _____.
11. The analysis of variance procedure is appropriate for testing the equivalence of a set of two or more populations.
12. A statistical measure computed from population data is called _____.
- IV. 13. A _____ is a portion of the population which is examined with a view to estimating the characteristics of the population.
14. The standard deviation of sampling distribution is called _____.
15. The number of degrees of freedom in a 3×3 contingency table is _____.
16. Student's 't' distribution was discovered by _____.

(4 × 1 = 4)

Turn over

Part B

Answer any five questions.

Each question carries a weight of 1.

Write short notes on :

17. Mutually exclusive events.
18. Quota Sampling.
19. Null Hypothesis.
20. Level of significance.
21. F-test.
22. Student's t-test.
23. Central limit theorem.
24. Type I error.

(5 × 1 = 5)

Part C

Answer any four questions.

Each question carries a weight of 2.

25. A card is drawn at random from a well shuffled pack of cards. What is the probability that it is a heart or a queen?
26. A bag contains 4 white balls and 3 black balls. One ball is drawn from the bag which is not replaced. Then a second ball is drawn from the bag. Find the probability that both balls of the two drawings are white.
27. The average life of 26 electric bulbs were found to be 1200 hours with a standard deviation of 150 hours. Test whether these bulbs could be considered as a random sample from a normal population with mean 1300 hours.
28. A wholesaler in apples claim that only 4 per cent of the apples supplied by him are defective. A random sample of 600 apples contained 36 defective apples. Test the claim of the wholesaler.
29. A random sample of 100 patients suffering from a certain disease was given a serum treatment. It was observed that 75 patients were relieved of the disease. Find 95 per cent confidence limits for the percentage of patients cured.
30. Explain the procedure generally followed in testing of a hypothesis.

(4 × 2 = 8)

Part D

Answer any two questions.

Each question carries a weight of 4.

31. A sample analysis of an examination result of 200 students were made. It was found that 46 students had failed, 68 secured III class, 62 second class and the rest were placed in the first division. Are these figures commensurate with the general examination results which is in the ratio 2 : 3 : 3 : 2 for various categories respectively.
32. Three different machines are used for a production. On the basis of the outputs, test whether the machines are equally effective.

Output		
Machine 1	Machine 2	Machine 3
10	9	20
5	7	16
11	5	10
10	6	14

(Given : Value of F at 5% level of significance with (2, 9) d.f. = 4.26)

33. A bag contains 3 black and 4 white balls. Two balls are drawn at random at a time without replacement. (a) What is the chance that second ball selected is white? (b) What is the conditional probability that first ball selected is white if the second ball is known to be white?

(2 × 4 = 8)