15U330 (Pages: 2)

Name: ....

Reg. No...................

THIRD SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2016
(CUCBCSS – UG)

Psychology – Complementary Course

CC15U PSY3 C02 – PSYCHOLOGICAL STATISTICS

(2015 Admission)

Time: Three Hours
Maximum: 80 Marks

Part A

(Answer *all* questions. Each question carries **1** mark)

A. **Objective type Questions**:

1. The mean of the binomial distribution with n=10 and p =0.25 is
   (a) 10   (b) 0.25   (c) 2 .5   (d) 7.5

2. The variance of a Poisson variate is:
   (a) Greater than,   (b) less than,   (c) equal to,   (d) twice, its mean

3. Normal curve is :
   (a) Very flat   (c) bell shaped and symmetrical about mean, c)very peaked (d) smooth.

4. Level of significance is the probability of
   (a) Type I error (b) Type II error (c) Not committing error (d) None of these.

5. The variance of a normal distribution for specified value can be tested by
   (a) F- test (b) Z – test (c) Chi-Square- test (d) t – test

B. **Fill in the blanks**:

6. The variance of a binomial distribution with parameters n and p is..............

7. For a normal distribution mean = ... = mode.

8. Rejecting the null hypothesis H_0 when it is true is called..............

9. The study of sample is referred to as................

10. The error arising due to drawing inference about the population on the basis of few observations is called..............

(10 x 1 = 10 Marks)

Part B

(Answer *all* questions. Each one carries **2** marks)

11. A die is thrown three times. Getting '5' or '6'is considered as a success. Find the probability of getting two successes.

12. Write down the p.d.f. of the Poisson distribution with mean 5.

13. Define the terms Population and Sample.

14. What is non sampling error?

15. Distinguish between parameter and statistic.

16. What is standard error of a statistic?

17. What are simple and composite hypotheses?

18. Define power of a statistical test.

19. What is the test statistic for testing $H_0 : P_1 = P_2$ against $H_1 : P_1 \neq P_2$?

20. What is the use of F – test?

<div align="right">(10 x 2 = 20 Marks)</div>

Part C

Paragraph Questions.

(Answer any *six* questions. Each question carries **5** marks)

21. The mean and variance of a binomial variate are 16 and 8 respectively.
    Find P (X = 1).

22. If X follows the Poisson distribution and $P(X = 2) = \frac{2}{3} P(X = 1)$. Find P(X = 0).

23. Define Normal probability distribution. If the mean of a normal distribution is μ and its variance is σ^2 , what are its (i) mode (ii) median (iii) β_1.

24. X is normally distributed with mean 12 and standard deviation 4. Find out the probability of the following: (i) X > 20 (ii) 0 < X < 12

25. What are the merits and demerits of sample survey?

26. What is meant by Stratified random sampling? What are its advantages over systematic sampling?

27. Explain briefly the procedure followed in tests of a statistical hypothesis.

<div align="right">(6 x 5 = 30 Marks)</div>

Part D

Essay Questions.

(Answer any *two* questions. Each question carries **10** marks)

28. Fit a binomial distribution to the following data and find the theoretical frequencies.

    x: 0   1   2   3   4

    f : 30   62   46   10   2

29. Explain the methods for testing the equality of means of two populations, pointing out the modifications to be made when the samples are small and large and the variances are known and unknown.

30. A machine puts out 16 imperfect articles in a sample of 500. After the machine is overhauled, it puts 3 imperfect articles in a batch of 100. Has the machine improved?

31. State central limit theorem and give one example where it is used in testing of hypothesis.

<div align="right">(2 x 10 = 20 marks)</div>

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