SUB.CODE: 18UMM4A6

REG.NO:

DHANALAKSHMI SRINIVASAN COLLEGE OF ARTS & SCIENCE FOR WOMEN (AUTONOMOUS)

(For Candidates admitted from 2019-2020 onwards)

UG DEGREE EXAMINATIONS APRIL - 2021

BBA - AVIATION MANAGEMENT

MATHEMATICAL STATISTICS-II

Time: 3 Hrs **Max.Marks: 75**

PART - A

CHOOSE THE CORRECT ANSWER **(10X1=10)**

1. The standard normal distribution is represented by

   a) N(0,0) b) N(1,1) c) N(0,1) d) N(1,0)

2. The normal distribution is a limiting case of binomial distribution if

   a) $n\to\infty, p\to 0$ b) $n\to 0, p\to q$ c) $n\to\infty, p\to n$ d) None of the above

3. The Skewness in a chi-square distribution will be zero if

   a) $n\to\infty$ b) $n=0$ c) $n=1$ d) $n<0$

4. In t-distribution μ_2 is

   a) n/n-2 b) n-2/n c) n/2 d) 0

5. The two lines of regression are given as x+2y=5 and 2x+3y=8 then the mean values of x and y respectively are

   a) 2,1 b)1,2 c)2,5 d)2,3

6. The regression coefficients are b_2 and b_1 then the correlation co-efficient r is

   a) b_1/b_2 b) b_2/b_1 c) b_1b_2 d) $\pm\sqrt{b_1b_2}$

7. Errors in sampling, type 1 error is

   a) Reject H_0 when it is true. b) Accept H_0 when it is wrong

   c) Accept H_0 when H_1 is true d) none of the above

8. Any hypothesis the complementary to the null hypothesis is

   a) Hypothesis b) null hypothesis c) alternative hypothesis d) 0

9. The moment generating function of gamma distribution is

   a) $(1+t)^{\lambda}$ b) $(1-t)^{\lambda}$ c) $(1-t)^{-\lambda}$ d) $(1+t)^{-\lambda}$

10. M.G.F of Exponential distribution is

    a) $\theta/\theta-t$ b) $1/\theta$ c) $1/\theta^2$ d) mean / θ

PART - B

ANSWER ALL THE QUESTIONS **(5X7=35)**

11. a) Derive mean and variance of binomial distribution.

(OR)

b) State and prove central limit theorem.

12. a) A random sample of boys had the following I.Q'S: 70,120,110,101,88,83,95,98,107,100. Do these data support the assumption of a population mean I.Q'S of 100?

(OR)

b) Explain paired t-test.

13. a) Write the properties of Regression coefficients.

(OR)

b) Compute rank correlation coefficient from the following data:

X:	77	54	27	52	14	35	90	25	56	60
Y	35	38	60	40	50	40	35	56	34	42

14. a) Explain the type 1 and type 2 errors.

(OR)

b) In a sample of 1000 people in Maharashtra, 540 are rice eaters and the rest are wheat eaters. Can we assume that both rice and wheat are equally popular in this state at 1% level of significance?

15. a) Derive the mean deviation of rectangular distribution defined in (a,b)

(OR)

b) Derive mean and variance of Gamma distribution.

PART - C

ANSWER ANY THREE QUESTIONS **(3X10=30)**

16. Derive the moment generating function of normal distribution.

17. The following figures show the distribution of digits in numbers chosen at random from a telephone directory:

Digits:	0	1	2	3	4	5	6	7	8	9	total
Frequency:	1026	1107	997	966	1075	933	1107	972	964	853	10000

Test whether the digits may be taken to occur equally frequency in the directory.

18. Compute karl pearson's correlation coefficient for the following data:

X:	57	58	59	59	60	61	62	64
Y:	67	68	65	68	72	72	69	71

19. Random samples drawn from two countries gave the following data relating to the heights of adult males:

Country a country B		
Mean height (in inches)	67.42	67.25
Standard deviation (in inches)	2.58	2.50
Number in samples	1000	1200

Is the difference between the means significant?

20. Derive F- distribution.