Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University), Coimbatore-641 043

Bachelor's Degree Examination – November 2018

I--- Semester

Class : UG **Time :3 hours**
Major : Information Technology **Max. Marks: 100**

18BIT101-DSE-I- Probability and Statistics

Part-A **10 x 1=10**
Choose the correct answer

1. From a bag containing 5 black and 15 white balls, a ball is drawn at random. What is the probability it is white?
   a. 5/15 b.15/20 c. 5/20 d. 15/15

2. One card is drawn at random from a pack of 52. What is the probability that it is either a king or a queen?
   a. 2/13 b.4/13 c.5/13 d.6/13

3. Events are those in which the occurrence (or) non-occurrence of one event in any one trial affects the probability of other events in other trials is known as
   a. Mutually exclusive b. Independent c. Dependent d. Equally likely

4. A bag contains 5 white and 3 black balls. Two balls are drawn at random one after the other without replacement. What is the probability that both drawn are black?
   a. 3/28 b.5/28 c. 9/28 d. 11/28

5. The unpublished sources are
   a. Primary data b. Secondary data c.Both (a) & (b) d. None

6. Bar diagrams are
   a. One dimensional b. Two dimensional c. Three dimensional d. None

7. The sum of the squared deviations of the items from arithmetic mean is
   a. Zero b. Minimum c. Maximum d. None

8. The positional average is known as
   a. Mean b. Median c. Mode d. GM

9. Semi-inter quartile range is known as
   a. Quartile deviation b. Standard deviation c. Mean deviation d. Range

10. The range of 3,5,8,2,9,3,4 is
    a. 5 b.3 c.8 d. 7

Part B

5 x 6=30

Answer the following

Answer should not exceed 400 words or two pages

11.a. Explain mutually exclusive events

(or)

11.b. A bag contains 30 balls numbered from 1 to 30. One ball is drawn at random. Find the probability that the ball drawn will be having the number multiple of 3 or 7.

12.a. Explain dependent and independent events.

(or)

12.b. A class consists of 80 students, 25 of them are girls and 55 boys, 10 of them are rich and remaining poor, 20 of fair complexioned. What is the probability of selecting a fair complexioned rich girl?

13.a. What are the methods available to collect primary data?

(or)

13. b. Explain the types of Tables.

14.a. Find the median from the following data

4100, 4150, 6080, 7020, 5200, 7120,4300, 6160, 7400

(or)

14.b. Find the mode for the following data

5110, 6120, 7130, 6120, 5110, 8140, 7130, 6120, 7130, 8140

15.a. Calculate Quartile deviation from blood serum cholesterol levels of 10 persons

240, 260, 290, 245, 255, 288, 272, 263, 277, 251

(or)

15.b. Find the mean deviation from the following data

20, 28, 40, 12, 30, 15, 50, 55, 10, 60

Part C

5 x 12=60

Answer the following

Answer should not exceed 800 words or four pages

16.a. State and prove addition theorem of probability.

(or)

16. b. A problem in Statistics is given to five students A, B, C, D and E. Their chances of solving it are1/2, 1/3, 1/4, 1/5, and 1/6. What is the probability that the problem will be solved?

17.a. State and prove multiplication theorem of probability.

(or)

17.b. State and prove Baye's theorem.

18.a. Discuss in detail about the sources of collection of secondary data.

(or)

18.b. Discuss the different types of bar diagrams.

19.a. Determine arithmetic mean from the following data

Marks :	0-10	10-20	20-30	30-40	40-50
No, of Students :	7	15	24	16	8

(or)

19.b. From the following data compute the value of Harmonic mean

Class:	10-20	20-30	30-40	40-50	50-60
Frequency:	4	6	10	7	3

20.a. Calculate standard deviation from the following data

Age :	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of persons:	15	15	23	22	25	10	5	10

(or)

20. b. From the table given below

	Factory A	Factory B
Number of employees	100	150
Average wage per employee	3200	2800
Variance of wage per employee	625	729

Determine which factory has great variation in distribution of wage per employee.

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