19BPU07

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BCom DEGREE EXAMINATION MAY 2022
(Second Semester)
Branch – **COMMERCE(BUSINESS PROCESS SERVICE)**

STATISTICS FOR BUSINESS PROCESS

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. An example for one dimensional diagram
   a) Ogives b) Pictograms
   c) Carto/ grams d) Bar chart

2. The formula for variance of individual series
   a) $\sigma^2 = \frac{\sum x}{n} - (\bar{x})^2$ b) $\sigma^2 = \frac{\sum x^2}{n} - (\bar{x})$
   c) $\sigma^2 = \frac{\sum x^2}{n} - (\bar{x})^2$ d) $\sigma^2 = \frac{\sum x^2}{n} + (\bar{x})^2$

3. The range of the correlation is
   a) -1 to +1 b) - 1 to 0
   c) 1 to 2 d) 0 to 1

4. Baye's theorem is useful to find out
   a) Direct probability b) Inverse probability
   c) Indirect probability d) Total probbaility

5. The shape of the normal distribution is
   a) Bell b) Triangle
   c) Straight line d) Square

SECTION - B (15 Marks)

Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6. a) Population of India in 5 censal years is given. Draw a Simple Bar diagram and give your comments.

Year	1951	1961	1971	1981	1991
Population (Crores)	36	44	55	68	84

Write the problems in data collection.

(OR)

b) Write the procedure for preparing Questionnaire.

7. a) Calculate the Median from the following data

Marks	40	50	54	60	68	80
No.of students	10	18	20	39	15	8

(OR)

b) Calculate the standard deviation from the following data

X	6	9	12	15	18
f	7	12	13	10	8

Cont...

8. a) Write a note on Scatter diagram.

OR

b) Two Judges were asked to rank 7 different types of lipsticks. The ranks are given below.

Lipsticks	A	B	C	D	E	F	G
Meena	2	1	4	3	5	7	6
Lakshmi	1	3	2	4	5	6	7

Apply a suitable test and give you comments

9. a) A bag contains 6 white ,4 red and 10 black balls. Two balls are drawn at random. Find the probability that both of them are black.

b) A sub –committee of 6 members is to be formed out of a group consisting of 7 men and 4 women. Calculate the probability that the sub –committee will consist of (i) exactly 2 women (ii) at least 2 women.

(OR)

c) The probabilities of solving a problem in Statistics by A, B and C are given as $\frac{1}{2}, \frac{1}{3}$, and $\frac{1}{4}$. What is the probability that the problem will be solved?

d) The odds against Mr.X solving a problem are 8:6 . The odds in favour of Mr Y solving a problem are 9 : 12. When both try to solve the problem , What is the probability that the problem will be solved by X and Y?

10. a) The following mistakes per page were observed in a book

No .of mistakes per page	0	1	2	3	4
No. of items the mistake occured	211	90	19	5	0

Fit a Poisson distribution for the given data.

(OR)

b) Given that the p.d.f of a r.v 'X' is $f(x) = Kx$,$0 < x < 1$, *find* K

SECTION -C (30 Marks)

Answer **ALL** questions

ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11. a) Draw a histogram and frequency polygon for the given data

Size	30 -40	40 -50	50-60	60 -70	70 -80
Frequency	3	5	12	8	4

(OR)

b) Explain the different methods of presenting data in business analytics.

12. a) From the following data calculate mean and standard deviation.

x	50-53	53-56	56-59	59-62	62-65	65-68	68-71	71-74	74-77
f	3	8	14	30	36	28	16	10	5

(OR)

b) (i) List the merits of Quartile deviation .

(ii) Find the Quartile deviation from the following data

391, 384, 591, 407, 522, 777, 733, 1490, 2488.

13. a) Find the simple correlation coefficient from the following data.

X	:65	66	67	67	68	69	70	72
Y	:67	68	65	68	72	72	69	71

(OR)

b) Distinguish the difference between Correlation and Regression.

14. a) A bag contains 6 white and 4 black balls. Another bag contains 7 white and 3 black balls. One ball is drawn from each bag. What is the probability that (a) both are white (b) both are black and (c) one is white and another is black.

(OR)

b) From a bag containing 3 white and 5 red balls of identical size, two balls are drawn at random one after another. Find the probability of getting white balls both the draws if the draws are (i) with replacement (ii) without replacement.

15. a) A random variable 'X' has the following probability function.Find the constant k and the mean value of 'X'

X	1	2	3	4	5
P(X)	0.1	0.2	K	2k	0.1

(OR)

b) In a binomial distribution the mean is 20 and standard deviation is 4 Find $P(x = 0)$

$\tau p(x \leq 4)$

Z- Z- Z

END