

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BCom DEGREE EXAMINATION DECEMBER 2019
(First Semester)

Branch - COST AND MANAGEMENT ACCOUNTING
BUSINESS MATHEMATICS AND STATISTICS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10x1 = 10)

- 1 The sum of the first n natural number is.

$$\sum_{r=1}^n r = \frac{n(n+1)}{2}$$
- 2 The amount of money accumulated at the end of t compounding periods is
 (i) $A=P(1+r)^t$ (ii) $A=Pr$
 (iii) $A=(1+r)^t$ (iv) $A=P(1-r)^t$
- 3 The staterpent, "Statistics is both a science and an art", was given by
 (i) R.A.Fisher (ii) Tipper
 (iii) L.R.comor (iv) A.L.Bowley
- 4 A frequency distribution can be:
 (i) Discrete (ii) Continuous
 (iii) Both (a) and (b) (iv) Hone of (a) and (b)
- 5 Which measure of dispersion ensures higher degree of reliability?
 (i) Range (ii) Mean Deviation
 (iii) Quartile deviation (iv) Standard derivation
- 6 For a positive skewed distribution, which of the following inequality holds?
 (i) Median .Mode (ii) Mode>Mean
 (iii) Mean > Median (iv) Mean > Mode
- 7 Regression coefficient is independent of:
 (i) Origin (ii) Scale
 (iii) Both origin and scale (iv) Neither origin nor scale
- 8 The correlation between the two variables is unity, there is:
 (i) Perfect correlation (ii) Perfect positive correlation
 (iii) Perfect Negative correlation (iv) No correlation
- 9 Classical probability is also known as:
 (i) Lap lace's Probability (ii) Mathematical probability
 (iii) A prison probability (iv) All the above
- 10 A family of parametric distribution in which mean is equal to variance is :
 (i) Binomial distribution (ii) Gamma distribution
 (iii) Normal distribution (iv) Poisson distribution

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SECTION - B (35 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 7 = 35)

Find the sum to n terms: $6+66+666+\dots$

OR

The compounded amount of Rs.3000 after 4 years at 3% interest each half year. Find the compounded semi - annual.

What are the uses of statistics in business? Explain.

OR

Explain the diagrammatic and graphical representation of data.

State the good characteristics of central tendency and Dispersion.

OR

Elucidate about skewness and kurtosis.

Delineate about the types of correlation.

OR

Explain the two Regression equations.

State and prove addition theorem of probability.

OR

Explain the properties of Mathematical expectation with an example.

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SECTION - C (30 Marks)

Answer any THREE Questions

ALL Questions Carry EQUAL Marks (3 x 10 = 30)

A firm produces 1000 units of its product in the first year and produced 14,500 unit in 10 yeas. Find the increase per annum and also final the output in the fifteenth year.

Construct less than and more than ogives for the given data also find its median.

Salary (Rs.)	200-250	250-300	300-350	350-400	400-450	450-500
Number of Employees	10	11	15	23	20	12

The following informations are related to marks of two classes.

Marks	30-40	40-50	50-60	60-70
No.of students in class A	3	8	12	7
No.of students in class B	10	11	23	6

Determine which class of students is more variable? The following data showing the salaries and allowances of 12 persons, calculate the Karl Pearson's coefficient of correlation.

Salary:	439	467	535	580	388	702	245	465	456	453	428	477
Allowance:	148	148	190	130	101	203	106	143	149	135	165	182

A machine is known to be producing 20% defective items, construct the probability distribution for 5 items selected at random from 10,000 production of Machine. Also find the expected frequency, Mean and valiance of the production.