



BK BIRLA CENTRE FOR EDUCATION
SARALA BIRLA GROUP OF SCHOOLS
SENIOR SECONDARY | CO-ED DAY CUM BOYS' RESIDENTIAL SCHOOL



POST MID TERM EXAMINATION (2024-25)

APPLIED MATHEMATICS (241)

Class: XI
Date: 09 /01/25
Name:

Duration: 1 Hr
Max. Marks: 25
Exam Roll. No:

SECTION A

- The first quartile (Q1) of the data 20,18,15,7,8,9,4,3,10 is 1m
(a) 4.5 (b) 3.5 (c) 2.5 (d) 5.5
- Co efficient of quartile deviation of the following data is 1m
21,15,40,30,26,45,50,54,70,60,65
(a) 1/7 (b) 11/71 (c) 17/43 (d) none of these
- The mean deviation of the data 3,10,10,4,7,10,5 from the mean is 1m
(a) 2 (b) 2.57 (c) 3 (d) 3.75
- Standard deviation for first 10 natural numbers is 1m
(a) 5.5 (b) 3.87 (c) 2.97 (d) 2.87
- A sum of money doubles itself at compound interest in 15 years in how many 1m
years will it become eight times?
(a) 30 years (b) 45 years (c) 50 years (d) none of these
- The simple interest on Rs. 16,800 in nine months at the rate of 6 ¼% per 1m
annum is
(a) Rs.787.50 (b) Rs.820.50 (c) Rs.890 (d) none of these
- The total amount which will be due at the conclusion of the annuity is called 1m
the _____.
(a) Present Value (b) Future Value (c) Capital Value (d) none of these
- The total worth of all the payments of an annuity, at or before the beginning of 1m
the annuity is called _____.
(a) Annuity Certain (b) Annuity Contingent (c) Capital Value (d) none of these
- Assertion: The effective rate of interest corresponding to the nominal rate of 8% 1m
per annum compounded half yearly is 8.24%.
Reason: If nominal rate is r % compounded k times in a year then the
effective rate of interest is given by $r_e = (1 + r/100k)^k - 1$.
(a) Both assertion and reason are true and reason is the correct explanation of
assertion.
(b) Both assertion and reason are true but reason is not the correct
explanation of assertion.
(c) Assertion is true but reason is false
(d) Assertion is false but reason is true
- Assertion: Mean deviation about mean of a statistical data is the arithmetic 1m
mean of the numerical values of the deviations of the values of various items
from mean.
Reason: Sum of deviations from mean is always zero.

- (a) Both assertion and reason are true and reason is the correct explanation of assertion.
 (b) Both assertion and reason are true but reason is not the correct explanation of assertion.
 (c) Assertion is true but reason is false
 (d) Assertion is false but reason is true

SECTION B

11. Calculate the variance for the following distribution: 2m
- | | | | | | | | |
|-----------|-------|-------|-------|-------|-------|-------|--------|
| Class | 30-40 | 40-50 | 50-60 | 60-70 | 70-80 | 80-90 | 90-100 |
| Frequency | 3 | 7 | 12 | 15 | 8 | 3 | 2 |
12. For a given frequency distribution, standard deviation = 15, mean = 46, median = 48. Calculate the Karl Pearson's coefficient of skewness. 2m
13. Find the present value of Rs.1,50,000 due 10 years hence, if the discount rate is 8% per annum compounded quarterly. 2m
14. Calculate Karl Pearson's coefficient of skewness for the following data: 3m
- | | | | | | |
|-----------|------|-------|-------|-------|--------|
| C.I | 0-20 | 20-40 | 40-60 | 60-80 | 80-100 |
| Frequency | 15 | 20 | 30 | 25 | 10 |
15. Find the amount of an ordinary annuity of Rs. 6000 payable at the end of each quarter for three years at 8% per annum compounded quarterly. 3m
16. A man deposited Rs. 5000 in a bank for three years. If he is to get compound interest at 4% for first year ,3% for second year and 2% for third year find the amount he will get at the end of three years. 3m

*****BEST OF LUCK*****