ROLL NUMBER				

SET A

INDIAN SCHOOL MUSCAT
SECOND PERIODIC TEST
APPLIED MATHEMATICS

CLASS: XI | Sub.Code: 241 | Time Allotted: 50mts.

11.01.2023 | Max .Marks: 20

GENERAL INSTRUCTIONS:

- This question paper has three sections.
- Section A contains 3 MCQ and 1 Assertion Reasoning Question, each of 1 mark.
- Section B contains 3 questions of 2 marks each.
- Section C contains 2 questions of 3 marks each.
- Section D contains 1 Case Based Question of 4 marks.
- All questions are compulsory.

SECTION A

1. Which of the following is true for coefficient of correlation? 1
a) $r > 1$ b) $-1 < r < 1$ c) $r \leq -1$ d) $-1 \leq r \leq 1$

2. The Quartile coefficient of skewness is negative if : 1
a) $Q_3 + Q_1 >$ Median b) $Q_3 + Q_1 < 2$ Median
c) $Q_3 + Q_1 > 2$ Median d) $Q_3 + Q_1 = 2$ Median

3. The following marks were obtained by students in a test: 1
81, 72, 90, 90, 86, 85, 92, 70, 71, 83, 89, 95, 85, 79, 62. The range of the marks is:
a) 9 b) 33 c) 27 d) 17

ASSERTION-REASON BASED QUESTION

In question 4, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c)A is true but R is false.
(d) A is false but R is true.

Let $x_1, x_2, \ldots, x_n$ be n observations and let $\bar{x}$ be their Arithmetic Mean and σ^2 be the variance.

4. **Assertion:** Variance of $2x_1, 2x_2, \ldots, 2x_n$ is $4\sigma^2$. 1
Reason: A.M. of $2x_1, 2x_2, \ldots, 2x_n$ is $\bar{x}$.

SECTION B

5. The scores of a MCQ test of 10 students are given below: 2
37, 48, 35, 49, 29, 46, 49, 40, 33, 50.
Find the percentile rank of the score 49.

6. If Karl Pearson's coefficient of skewness of a distribution is 2.5, standard deviation is 8 and mean is 30, then find the mode of the distribution . 2

7. If the central moments μ_1, μ_2, μ_3 *and* μ_4 are 0, 6, 31 and 108 respectively, find the coefficient of Kurtosis and hence comment on the type of distribution. 2

SECTION C

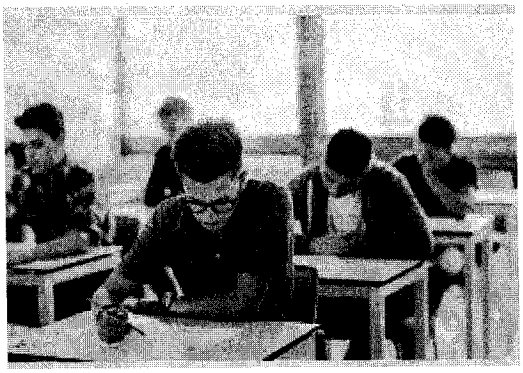
8. Find the mean deviation of the data 2, 9, 9, 3, 6, 9, 4 from the mean . 3

9. The heights (to nearest cm) of 60 students of a certain school are given in the following frequency distribution table; 3

Heights (in cm)	151	152	153	154	155	156	157
No. of students	6	4	11	9	16	12	2

Find the upper quartile.

10. **CASE BASED QUESTION:**
In a city school during the admission to class XI, five students were given a written test. The marks scored by these five students in the test for 25 marks are:
8, 13, 12, 15, 22.
On the basis of this information answer the following questions:
a) Find the mean of the given data. 1
b) Hence find the variance of the given distribution. 3



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ROLL NUMBER				

SET B

INDIAN SCHOOL MUSCAT
SECOND PERIODIC TEST
APPLIED MATHEMATICS

CLASS: XI Sub.Code: 241 Time Allotted: 50mts.

11.01.2023 Max .Marks: 20

GENERAL INSTRUCTIONS:

- This question paper has three sections.
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- Section B contains 3 questions of 2 marks each.
- Section C contains 2 questions of 3 marks each.
- Section D contains 1 Case Based Question of 4 marks.
- All questions are compulsory.

SECTION A

1. Which of the following is true for coefficient of correlation? 1
a) $r > 1$ b) $-1 < r < 1$ c) $-1 \leq r \leq 1$ d) $r \leq -1$

2. Karl Pearson's Coefficient of skewness is positive if
a) Mean < Mode b) Mean > Mode c) Median > Mode d) Mean = Mode 1

3. The following marks were obtained by students in a test: 1
62, 81, 72, 90, 90, 85, 92, 70, 79, 71, 83, 89, 86, 95, 85. The range of the marks is:
a) 9 b) 27 c) 33 d) 17

ASSERTION-REASON BASED QUESTION

In question 4, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c)A is true but R is false.
(d) A is false but R is true.

4. Let $x_1, x_2, \ldots, x_n$ be n observations and let $\bar{x}$ be their Arithmetic Mean and σ^2 be the variance.
Assertion: Variance of $3x_1, 3x_2, \ldots, 3x_n$ is $3\sigma^2$. 1
Reason: A.M. of $3x_1, 3x_2, \ldots, 3x_n$ is $3\bar{x}$.

SECTION B

5. The scores of a MCQ test of 10 students are given below: 2
37, 48, 35, 49, 29, 46, 49, 40, 33, 50.
Find the percentile rank of the score 48.

6. If the mean, mode and Karl Pearson's coefficient of skewness of a distribution are 32, 35 and -0.56 respectively, then find the standard deviation of the distribution . 2

7. If the central moments μ_1, μ_2, μ_3 *and* μ_4 are 0, 2.5, 7.5 and 18.75 respectively, find the coefficient of Kurtosis and comment on the type of distribution. 2

SECTION C

8. Find the mean deviation of the data 3, 10, 10, 4, 7, 10 and 5 from the mean . 3

9. The heights (to nearest cm) of 60 students of a certain school are given in the following frequency distribution table; 3

Heights (in cm)	151	152	153	154	155	156	157
No. of students	6	4	11	9	16	12	2

Find the lower quartile.

10. **CASE BASED QUESTION:**
In a city school during the admission to class XI, five students were given a written test. The marks scored by these five students in the test for 30 marks are:
15, 22, 13, 8, 12
On the basis of this information answer the following questions:

a) Find the mean of the given data. 1
b) Hence find the variance of the given distribution. 3

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ROLL NUMBER				

SET C

INDIAN SCHOOL MUSCAT
SECOND PERIODIC TEST

APPLIED MATHEMATICS

CLASS: XI
11. 01. 2023

Sub. Code: 241

Time Allotted: 50 min.
Max .Marks: 20

GENERAL INSTRUCTIONS:

- This question paper has three sections.
- Section A contains 3 MCQ and 1 Assertion Reasoning Question, each of 1 mark.
- Section B contains 3 questions of 2 marks each.
- Section C contains 2 questions of 3 marks each.
- Section D contains 1 Case Based Question of 4 marks.
- All questions are compulsory.

SECTION A

1. Which of the following is true for coefficient of correlation? 1
a) $-1 \leq r \leq 1$ b) $-1 < r < 1$ c) $r \leq -1$ d) $r > 1$

2. The Quartile coefficient of skewness is positive if : 1
a) $Q_3 + Q_1 >$ Median b) $Q_3 + Q_1 < 2$ Median
c) $Q_3 + Q_1 > 2$ Median d) $Q_3 + Q_1 = 2$ Median

3. The following marks were obtained by students in a test: 1
81, 72, 90, 90, 86, 85, 92, 70, 71, 83, 89, 95, 85, 79. The range of the marks is:
a) 9 b) 33 c) 25 d) 17

ASSERTION-REASON BASED QUESTION

In question 4, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c)A is true but R is false.
(d) A is false but R is true.

4. Let $x_1, x_2, \ldots, x_n$ be n observations and let $\bar{x}$ be their Arithmetic Mean and σ^2 be the variance. 1
Assertion: Variance of $2x_1, 2x_2, \ldots, 2x_n$ is $4\sigma^2$.
Reason: A.M. of $2x_1, 2x_2, \ldots, 2x_n$ is $2\bar{x}$.

SECTION B

5. The scores of a MCQ test of 10 students are given below: 2
37, 48, 35, 49, 29, 46, 48, 40, 33, 50.
Find the percentile rank of the score 49.

6. If the mean, mode and standard deviation of a distribution are 27.5, 30 and 7.2 respectively, then find the Karl Pearson's coefficient of skewness of the distribution . 2

7. If the central moments μ_1, μ_2, μ_3 *and* μ_4 are 0, 6, 19 and 42 respectively, find the coefficient of Kurtosis and hence comment on the type of distribution. 2

SECTION C

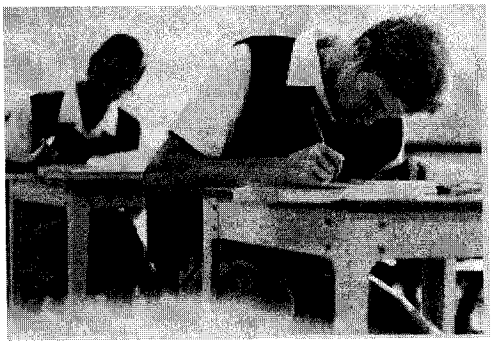
8. Find the mean deviation of the data 4, 7, 8, 9, 10, 12, 13 and 17 from the mean. 3

9. In a unit test, the marks obtained by 63 students of a certain school are given in the following frequency distribution table; 3

Marks	25	31	34	40	45	48	50	60
No. of students	3	8	10	15	10	9	6	2

Find the lower quartile.

10. **CASE BASED QUESTION:**
In a city school during the admission to class XI, five students were given a written test. The marks scored by these five students in the test for 25 marks are:
13, 15, 22, 8, 12
On the basis of this information answer the following questions:



a) Find the mean of the given data. 1
b) Hence find the variance of the given distribution. 3

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