

Final Term Examination 2011
Mathematics I X Paper – I
Science Group

Time allowed: 45 minutes

Max. Marks: 30

Student's Full Name: _____

Roll No: _____ **Section:** _____ **Invigilator's signature:** _____

Marks Obtained: _____ **Examiner's Signature:** _____

Re-checker's signature: _____ **Date:** _____

INSTRUCTIONS:

1. Read each question carefully.
2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
3. There are 30 answer numbers on the answer sheet. Use answer numbers 1 to 30 only.
4. In each question there are four choices A, B, C and D. Choose ONE. On the answer grid black out the box for your choice with a pencil as shown below.

Correct Way				Incorrect Way					
1	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D	1	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	<input type="checkbox"/> A	<input type="checkbox"/> B	<input checked="" type="checkbox"/> C	<input type="checkbox"/> D

5. If you want to change your answer, ERASE the first answer completely with a rubber, before Blacking out a new box
6. Do NOT write anything in the answer grid. The computer only records what is in the boxes.

1). The equation $y^2 - 9 = 0$, the product of the solution of y would be:

- a). -9
- b). -3
- c). 3
- d). 9

2). If $\sqrt{x\sqrt{x}} = 2$, then the result is:

- a). $x^3=4$
- b). $x^2=16$
- c). $x^3=16$
- d). $x^2=16$

3). If $x(x-1) = 0$, then the possible values of x will be:

- a). (1, 0)
- b). (-1, 1)
- c). (-1, 0)
- d). (1, 1)

4). $\{x / x \in R \wedge 3 < x \leq 9\}$ is equal to:

- a). {3, 4, 5, 6, 7, 8, 9}
- b). {3, 4, 5, 6, 7, 8}
- c). {4, 5, 6, 7, 8}
- d). {4, 5, 6, 7, 8, 9}

5). A perpendicular segment is drawn from a vertex to the side opposite of the vertex is called:

- a). Altitude
- b). Median
- c). Perpendicular bisector
- d). Right angle

6). Base of natural logarithm is:

- a). 1
- b). 2
- c). 5
- d). 10

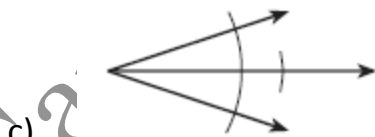
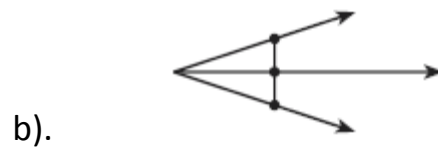
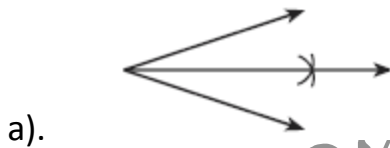
7). A line segment whose endpoints are a vertex and the midpoint of the side opposite the vertex.

- a). Median of a triangle
- b). Altitude of a triangle
- c). Tangent to a triangle
- d). Perpendicular bisector

8). Distributive property $A \cap (B \cup C)$ is equal to:

- a). $A \cup (B \cup C)$
- b). $A \cap (B \cap C)$
- c). $(A \cup B) \cap (A \cup C)$
- d). $(A \cap B) \cup (A \cap C)$

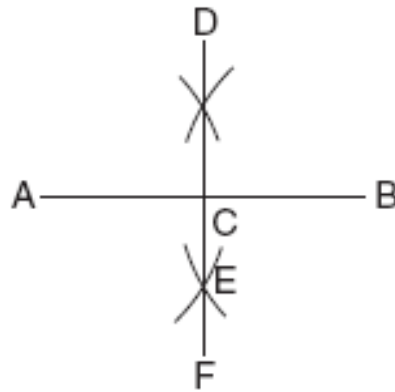
a 9). Which diagram below shows a correct geometrical construction using only compass and a straightedge (Ruler / scale) to bisect an angle:



10). What should be added or subtracted from $4x^2 + 25y^2$ to make it a perfect square:

- a). $16xy$
- b). $12xy$
- c). $24xy$
- d). $20xy$

11). A geometrical construction is shown in the accompanying diagram, select the appropriate statement about it from the given options:



- a). The bisector of $\angle ACD$
- b). The midpoint of DF
- c). The perpendicular bisector of AB
- d). A perpendicular line to AB from point D

12). Medians of a triangle intersect each other in the ratio:

- a). 1:3
- b). 1:2
- c). 1:1
- d). 1:4

13). π (pi) is said to be:

- a). Rational number
- b). Irrational number
- c). Terminating decimal fraction
- d). Recurring decimal fraction

14). If $x + y = 2$, and $xy = 3$ then the value of $x^2 + y^2$ will be:

- a). 4
- b). -2
- c). -4
- d). 2

15). By De Morgan's law $A^c \cup B^c$ is equal to:

- a). $A^c \cap B^c$
- b). $(A \cap B)^c$
- c). $A \cup B$
- d). $(A \cup B) \cap (A \cup B)$

16). $1000 + (-1000) = 0$ this property is said to be:

- a). Additive inverse
- b). Multiplication inverse
- c). Additive identity
- d). Multiplication Identity

17). $(a - b + c)^2$ on expanding is equal to:

- a). $a^2 - b^2 + c^2 - 2ab - 2bc + 2ca$
- b). $a^2 + b^2 + c^2 - 2ab - 2bc + 2ca$
- c). $a^2 + b^2 + c^2 + 2ab - 2bc + 2ca$
- d). $a^2 + b^2 + c^2 - 2ab - 2bc + 2ca$

18). Multiplication inverse of $\frac{1}{9}$ is equal to:

- a). 0.111
- b). 9
- c). 1
- d). $-\frac{1}{9}$

19). Additive inverse of $Y = \begin{bmatrix} 0 & 5b \\ 3c & -1 \end{bmatrix}$ matrix is:

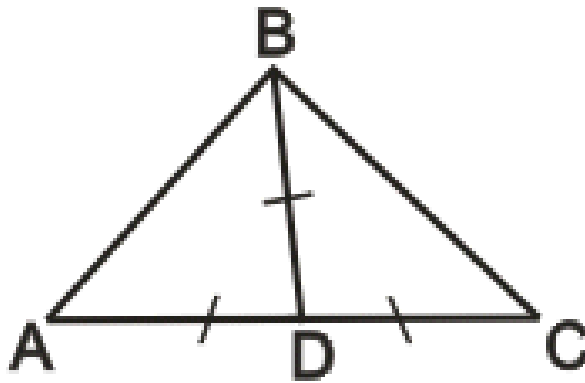
a). $\begin{bmatrix} 0 & 5b \\ 3c & -1 \end{bmatrix}$

b). $\begin{bmatrix} 0 & -5b \\ 3c & -1 \end{bmatrix}$

c). $\begin{bmatrix} 0 & 5b \\ -3c & -1 \end{bmatrix}$

d). $\begin{bmatrix} 0 & -5b \\ -3c & +1 \end{bmatrix}$

20). In the given congruent triangles, If $m\angle A = 40^\circ$, find $m\angle ABC$:



- a). 40°
- b). 120°
- c). 100°
- d). 90°

21). 1,2,3,4,5,6,3,7,2,9,3,7 the mode of given set of data is equal to:

- a). 3
- b). 7
- c). 2
- d). No mode

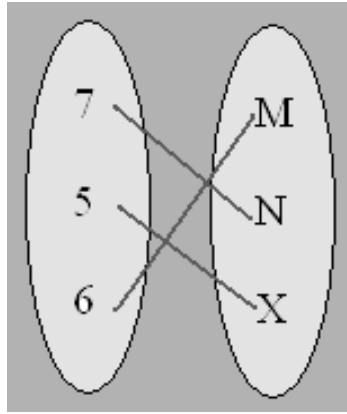
22). If $Q = \begin{bmatrix} 4 & -1 \\ 3c & +3 \end{bmatrix}$ is a singular matrix, then the value of 'C' will be:

- a). -1
- b). 12
- c). -9
- d). 4

23). Midpoint of any class is said to be:

- a). Class interval
- b). Class marks
- c). Class boundaries
- d). Classification

24). Identify the type of function:

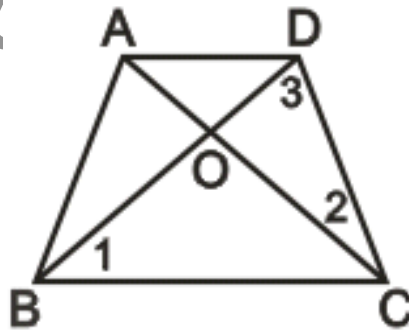


- a). One to one
- b). Onto
- c). No function
- d). Only has Domain

25). If matrix $A = [3, 2]$ and matrix $B = \begin{bmatrix} 1 \\ 5 \end{bmatrix}$ then $A \times B$ will be:

- a). [10]
- b). Not possible
- c). [13]
- d). Singular matrix

26). In the given figure $\overline{OA} \cong \overline{OD}$, $\overline{OB} \cong \overline{OC}$ and measurement of $\angle 1 = 38^\circ$, then the measure of $\angle 2 + \angle 3$ will be:

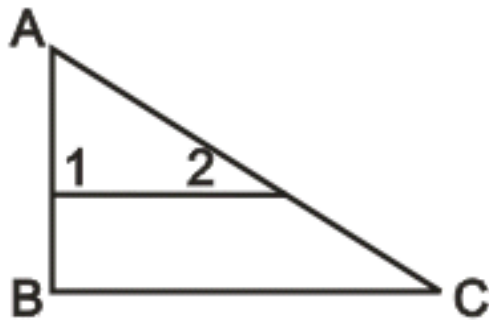


- a). 108°
- b). 90°
- c). 76°
- d). 28°

27). If $x : y = 3 : 7$ then $\frac{x}{x+y}$ will be:

- a). $\frac{3}{7}$
- b). $\frac{7}{3}$
- c). $\frac{3}{10}$
- d). $\frac{3}{4}$

28). If $m\angle 1 = m\angle B$ and $m\angle A : m\angle B : m\angle C = 1 : 2 : 1$, then the measure of $\angle 2$ will be:



- a). 60°
- b). 90°
- c). 45°
- d). 30°

29). A ratio between two similar quantities is always expressed:

- a). Meter
- b). Cm
- c). Kg
- d). No unit

30). If $3 : 5 :: 5 : x$ then:

- a). 25
- b). 3
- c). 15
- d). $\frac{25}{3}$

Name: _____ Class/Sec: _____ Roll No: _____

A B C D

A B C D

1).

A B C D

2).

A B C D

3).

A B C D

4).

A B C D

5).

A B C D

6).

A B C D

7).

A B C D

8).

A B C D

9).

A B C D

10).

A B C D

11).

A B C D

23).

A B C D

24).

A B C D

12).

A B C D

13).

A B C D

14).

A B C D

15).

A B C D

16).

A B C D

17).

A B C D

18).

A B C D

19).

A B C D

20).

A B C D

21).

A B C D

22).

A B C D

26)