

# ONE MARK & TWO MARKS SPECIAL TEST, 2011 - 2012

**STANDARD X**

Reg. No. 

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**MATHEMATICS**

**[Marks : 75**

**Time : 1.30 hrs.]**

**[Matrices (118–139), Coordinate Geometry (140–170), Probability (299–316)]**

**PART - I**

**25X1=25**

**Note: Answer ALL the questions. Choose the correct answer and write the alphabet only :**

1. If  $A \times \begin{pmatrix} 1 & 1 \\ 0 & 2 \end{pmatrix} = \begin{pmatrix} 1 & 2 \end{pmatrix}$  then the order of A is  
 a)  $2 \times 1$                       b)  $2 \times 2$                       c)  $1 \times 2$                       d)  $3 \times 2$
2. If  $\begin{pmatrix} -1 & -2 & 4 \\ a & & -3 \end{pmatrix} = \begin{pmatrix} 2 \\ -10 \end{pmatrix}$  then the value of 'a' is      a) 2      b) -4      c) -2      d) 4  
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3. Matrix  $A = [a_{ij}]_{m \times n}$  is a square matrix if  
 a)  $m < n$                       b)  $m > n$                       c)  $m = 1$                       d)  $m = n$
4. If  $A = [a_{ij}]_{2 \times 2}$  and  $a_{ij} = i + j$ , then A =  
 a)  $\begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$                       b)  $\begin{pmatrix} 2 & 3 \\ 3 & 4 \end{pmatrix}$                       c)  $\begin{pmatrix} 2 & 3 \\ 4 & 5 \end{pmatrix}$                       d)  $\begin{pmatrix} 4 & 5 \\ 6 & 7 \end{pmatrix}$
5. If  $A = \begin{pmatrix} 1 & -2 & 3 \end{pmatrix}$  and  $B = \begin{pmatrix} -1 \\ 2 \\ -3 \end{pmatrix}$  then  $A + B$       a)  $\begin{pmatrix} 0 & 0 & 0 \end{pmatrix}$       b)  $\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$       c)  $(-14)$       d) not defined
6. If  $\begin{pmatrix} 8 & 4 \\ x & 8 \end{pmatrix} = 4 \begin{pmatrix} 2 & 1 \\ 1 & 2 \end{pmatrix}$  then the value of 'x' is                      a) 1      b) 2      c)  $\frac{1}{4}$       d) 4
7. If A and B are square matrices such that  $AB = I$  and  $BA = I$ , then B is  
 a) Unit matrix                      b) Null matrix                      c) Multiplicative inverse matrix of A      d) -A
8. If  $A = \begin{pmatrix} 1 & -2 \\ -3 & 4 \end{pmatrix}$  and  $A + B = O$ , then B is  
 a)  $\begin{pmatrix} 1 & -2 \\ -3 & 4 \end{pmatrix}$                       b)  $\begin{pmatrix} -1 & 2 \\ 3 & -4 \end{pmatrix}$                       c)  $\begin{pmatrix} -1 & -2 \\ -3 & -4 \end{pmatrix}$                       d)  $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$
9. If  $A = \begin{pmatrix} \alpha & \beta \\ \gamma & -\alpha \end{pmatrix}$  is such that  $A^2 = I$ , then  
 a)  $1 + \alpha^2 + \beta\gamma = 0$       b)  $1 - \alpha^2 + \beta\gamma = 0$       c)  $1 - \alpha^2 - \beta\gamma = 0$       d)  $1 + \alpha^2 - \beta\gamma = 0$
10. The midpoint of the line joining  $(a, -b)$  and  $(3a, 5b)$  is  
 a)  $(-a, 2b)$                       b)  $(2a, 4b)$                       c)  $(2a, 2b)$                       d)  $(-a, -3b)$
11. If  $(1, 2)$ ,  $(4, 6)$ ,  $(x, 6)$  and  $(3, 2)$  are the vertices of a parallelogram taken in order, then the value of 'x' is                      a) 6                      b) 2                      c) 1                      d) 3
12. Area of the triangle formed by the points  $(0, 0)$ ,  $(2, 0)$  and  $(0, 2)$  is  
 a) 1 sq. unit                      b) 2 sq. units                      c) 4 sq. units                      d) 8 sq. units
13. Slope of the straight line which is perpendicular to the straight line joining the points  $(-2, 6)$  and  $(4, 8)$  is equal to      a)  $\frac{1}{3}$                       b) 3                      c) -3                      d)  $-\frac{1}{3}$
14. The x and y-intercepts of the line  $2x - 3y + 6 = 0$ , respectively are  
 a) 2, 3                      b) 3, 2                      c) -3, 2                      d) 3, -2
15. The centre of a circle is  $(-6, 4)$ . If one end of the diameter of the circle is at  $(-12, 8)$ , then the other end is at      a)  $(-18, 12)$       b)  $(-9, 6)$       c)  $(-3, 2)$       d)  $(0, 0)$
16. The equation of a straight line having slope 3 and y-intercept -4 is  
 a)  $3x - y - 4 = 0$                       b)  $3x + y - 4 = 0$                       c)  $3x - y + 4 = 0$                       d)  $3x + y + 4 = 0$
17. The equation of a line passing through  $(4, -3)$  and perpendicular to x-axis is  
 a)  $x + 4 = 0$                       b)  $x - 4 = 0$                       c)  $y + 3 = 0$                       d)  $x - 3 = 0$
18. The probability that a student will score centum in mathematics is  $\frac{4}{5}$ . The probability that he will not score centum is      a)  $\frac{1}{5}$                       b)  $\frac{2}{5}$                       c)  $\frac{3}{5}$                       d)  $\frac{4}{5}$
19. If A and B are two events such that  $P(A) = 0.25$ ,  $P(B) = 0.05$  and  $P(A \cap B) = 0.14$ , then  $P(A \cup B) =$   
 a) 0.61                      b) 0.16                      c) 0.14                      d) 0.6
20. There are 6 defective items in a sample of 20 items. One item is drawn at random. The probability that it is a non-defective item is      a)  $\frac{7}{10}$       b) 0      c)  $\frac{3}{10}$       d)  $\frac{2}{3}$
21. A bag contains 5 black balls, 4 white balls and 3 red balls. If a ball is selected at random, the probability that it is not red ball is      a)  $\frac{5}{12}$       b)  $\frac{4}{12}$       c)  $\frac{3}{12}$       d)  $\frac{3}{4}$

