# BOARD OF INTERMEDIATE EDUCATION, KARACHI 

INTERMEDIATE EXAMINATION, 2016 (ANNUAL)

Date: 07.05.2016
9:30 a.m. to 9:50 a.m.

MATHEMATICS PAPER - I
(Science Pre-Engineering \& Science General Groups)

Max. Marks: 20
Time: 20 minutes


## SECTION 'A' <br> (MULTIPLE CHOICE QUESTIONS) - (M.C.Qs.) <br>  <br> i) This section consists of 20 part questions and all are to be answered. Each question carries one mark. <br> Write this Code No. in the Answerscript.

NOTE:
ii) Do not copy the part questions in your answerbook. Write only the answer in full against the proper number of the question and its part.
iii) The code of your question paper is to be written in bold letters in the beginning of the answerscript.
iv) The use of calculator is allowed. All notations are used in their usual meanings.

1. Choose the correct answer for each from the given options:
i) If $i$ is imaginary number then $i^{7}=$ :

| $*$ | $-i$ | $*$ | $i$ | $*$ | 1 | $*$ | -1 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

ii) If $\omega$ is a complex cube roots of unity then $\omega^{17}=$ :

* $0 \quad$ * $1 \quad$| $\omega^{2}$ |
| :---: | :---: | :---: | :---: | :---: | :---: |

iii) If the roots of the equation $p x^{2}+q x+r=0$ are imaginary then $q^{2}-4 p r$ is:

* zero * less than zero * greater than zero * perfect square
iv) $\left[\begin{array}{cc}2 & 0 \\ 0 & -2\end{array}\right]$ is a/an:
* Rectangular Matrix * Scalar Matrix * Diagonal Matrix* Unit Matrix
v) If a die and a coin are tossed simultaneously then the probability of getting two heads is:
$\begin{array}{llllllll} & \frac{1}{3} & * & \frac{1}{2} & * & 0 & * & 1\end{array}$
vi) The number of ways in which 7 girls can be seated around a round table is:
* $\begin{array}{ccccccc} & 6 & * & 6! & * & 7 & *\end{array}$
vii) If $4^{x+2}=64$ then $x$ is equal to:
$\begin{array}{lllllllll}* & 2 & * & 0 & * & 1 & * & 3\end{array}$
viii) If the order of two matrices $A$ and $B$ is $m \times n$ and $n \times p$ respectively, then the order of matrix $A B$ is:
* $\quad p \times m \quad * \quad n \times p \quad$ * $\quad p \times n \quad * \quad m \times p$
ix) If $\left[\begin{array}{ll}3 & a \\ 2 & 8\end{array}\right]$ is a singular matrix, then the value of ' $a$ ' is:

$$
\begin{array}{llllllll}
* & 10 & * & 12 & * & -12 & * & \frac{1}{12}
\end{array}
$$

x) The middle term in the expansion of $\left(x^{2}+\frac{1}{x}\right)^{2 n}$ is:

$$
\text { * } 2 n+1^{\text {th }} \text { term } \quad * \quad n+1^{\text {th }} \text { term } \quad * \quad 2 n+2^{\text {th }} \text { term } \quad n+2^{\text {th }} \text { term }
$$

xi) $\frac{2 \pi}{3}$ radians in degrees is equal to:

* $60^{\circ} \quad * \quad 90^{\circ} \quad * \quad 120^{\circ} \quad * \quad 150^{\circ}$
xii) If the sides of a triangle are 5,6 and 7 units, then 2 s is equal to:
* $\quad 6$ units $\quad * \quad 9$ units $\quad * \quad 18$ units $\quad * \quad 27$ units
xiii) $\tan ^{-1} \tan (-1)=$ :
* $\quad-1$
* $\frac{\sqrt{3}}{2}$
* $\quad 1$


## 1

Write this Code No. in the Answerscript.
$\sum n^{2}=:$

* $\frac{n n-1}{2} * \frac{n n+1^{2}}{4} \quad * \quad \frac{n n+1}{2} \quad * \quad$| $\frac{n n+12 n+1}{6}$ |
| :---: |

xv) $\quad \sin \left(\frac{\pi}{2}-\theta\right)=:$

* $\cos \theta \quad * \quad-\sin \theta \quad * \quad \sin \theta \quad * \quad-\cos \theta$
xvi) 125 is:
* Diagonal matrix $\quad$ S Scalar matrix $\quad * \quad$ Column matrix $\quad * \quad$ Row matrix
xvii) $\quad \pi$ is a/an:
* Natural number * Integer * $\quad$ Rational number $\quad$ Irrational number
xviii) $\quad a, b \square c, d=$

xix) If $z=3+4 i$ then $z+\bar{z}=$
$\begin{array}{llllllll}* & 8 i & * & 6 & * & 0 & * & -1\end{array}$
$\mathrm{xx}) \quad$ If $z=a, b$ is a complex number then $\bar{z}=$ :
* $a,-b \quad-a, b \quad$ * $\quad a, b \quad * \quad-a,-b$

