

Std. : XI (Sci.)
 Date : 29/8/2019

Sub. - Mathematics & Statistics

Marks : 25
 Time : 1.30 To 3.00

- Note :-**
- 1) All questions are compulsory.
 - 2) Use of log table is allowed.

Section - A

Select & write most appropriate answer from given alternatives for each.

- Q. 1** If area of sector and length of an arc of a circle are $\frac{27}{2} \pi$ sq.cm. and 3π cm respectively then the radius of the circle is 5
- a) 3 cm b) 6 cm c) 9 cm d) 12 cm 1
- Q. 2** Angle between hands of a clock when it shows the time 1 : 35 is 1
- a) $160^\circ, 30'$ b) $161^\circ, 30'$ c) $162''$ d) $162^\circ, 30'$
- Q. 3** $\sin 30^\circ + \cos 45^\circ + \tan 180^\circ =$ 1
- a) $\frac{1+\sqrt{2}}{2}$ b) $\frac{1-\sqrt{2}}{2}$ c) $1+\sqrt{2}$ d) $1-\sqrt{2}$
- Q. 4** If w is a complex cube root of unity, then the value of $w^{33} + w^{99}$ is 1
- a) 0 b) 1 c) 2 d) 3
- Q. 5** The sum of 3 terms of a GP is $\frac{21}{4}$ and their product is 1 then the common ratio is 1
- a) 1 b) 2 c) 4 d) 8

Section - B

- Q. 6** If $x(1+3i) + y(2-i) - 5 + i = 0$, find $x+y$
- Q. 7** Find the values of
- a) $\sin \frac{19\pi}{3}$ b) $\cos 1140^\circ$
- Q. 8** For a G.P. $a=2, r=\frac{-2}{3}$, find S_5

Section - C

- Q. 9** Find the trigonometric functions of -300°

OR

- Q. 9** Find the trigonometric functions if $\cos(\theta) = \frac{-3}{5}$ and $108^\circ < \theta < 270^\circ$
- Q. 10** Find the square root of $15-8i$

Section - D

- 11 Find five numbers in G. P. Such that thier product is 243 and sum of second and fourth number is 10

OR

11 Find $\sum_{r=1}^n 5r^2 + 4r - 3$

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- 12 $\triangle PQR$ is an equilateral triangle with side 18 cm. A circle is drawn on the segment QR as diameter.

Find the length of the arc of this circle within the triangle.

OR

The diameter of circle is 14 cm. Find length of arc subtending 34° at