A. All questions are compulsory
questions are compulsory etudy, Assignments, Solved Previous Year Papers. Questions and Answers. Free Forever.
B. The Question Paper consists of 30 Questions divided into Four sections $\mathbf{A}, \mathbf{B}, \mathbf{C}$ and $\mathbf{D}$.
C. Section A contains 6 Questions of 1mark each.
D. Section B contains $\mathbf{6 Q u e s t i o n s}$ of $\mathbf{2}$ marks each.
E. Section C contains $\mathbf{1 0}$ Questions of $\mathbf{3}$ marks each.
F. Section D contains 8 Questions of 4 marks each.
G. There is no overall choice. However, an Internal choice has been provided in Four questions of 3 Marks each and Three questions of $\mathbf{4}$ Marks each. You have to attempt only one of the alternatives in all such questions.
H. Use of Calculators is not permitted.

## Section A

1

Check whether the following are quadratic equations:

$$
(x+1)^{2}=2(x-3)
$$

[1]

2
For the following APs, write the first term and the common difference $0.6,1.7,2.8,3.9, \ldots$
[1]

3
State Euclid's division algorithm.
[1]

4
Find the distance between the following pairs of points:
$(-5,7),(-1,3)$
[1]

5
Write the value of $\sin \left(65^{\circ}+\theta\right)-\cos \left(25^{\circ}-\theta\right)$.
[1]

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(1) simitiar ifgures.
(ii) non-similar figures.
[1]

## Section B

7
The H.C.F. and L.C.M. of two numbers are 12 and 240 respectively. If one of these numbers is 48 ; find the other number.
[2]

8
Find the number of solutions of the follow ing pair of linear equations:
$x+2 y-8=0$
$2 x+4 y=16$
[2]

9
A deck of 52 cards is shuffled. Tanvika draws a single card from the deck at random. What is the probability that the card is a Jack.
[2]

10
Determine if the points $(1,5),(2,3)$ and $(-2,-11)$ are collinear
[2]

11
12 cards, numbered $1,2,3 \ldots \ldots, 12$ are put in a box and mixed throughly. A card is drawn at random from the box. Find the probability that the card drawn bears
(i) an even number
(ii) a number divisible by 2 or 3 .
[2]

12
Choose the correct choice in the following and justify :
30th term of the AP: $10,7,4, \ldots$, is

11th term of the A.P. is $-3, \frac{1}{2}, 2, \ldots$.
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13
Kind a cubic polynomial with the sum, sum of the product of its zeroes taken two at a time, and the product of its zeroes as 2, -7, -14 respectively.
[3]

14
Find the distance between the points
$(\cos \theta-\sin \theta),(-\cos \theta, \sin \theta)$
[3]

OR

Find the distance between the points
Let the given points be $A(a \cos \theta, 0)$ and $B(0, a \sin \theta)$
[3]

15
The sets of Physics, Chemistry and Mathematics books have to be stacked in such a way that all the books are stored topic wise and the height of each stack is the same. The number of Physics books is 12 , the number of Chemistry books 20 and the number of Mathematics books is 30 . Assuming that the books are of the same thickness, determine the number of stacks of Physics, Chemistry and Mathematics books.
[3]

16
For what value of $k$, the pair of linear equations $3 x-k y+7=0, x-2 y+5=0$ has unique solution.
[3]

17
Evaluate without using trigonometric tables:
$\left[3 \frac{3}{7 \cos 55^{\circ}} 7 \sin 35^{\circ}-\frac{4\left(\cos 70^{\circ} \cdot \operatorname{cosec} 20^{\circ}\right)}{7\left(\tan 5^{\circ} \cdot \tan 25^{\circ} \cdot \tan 45^{\circ} \cdot \tan 65^{\circ} \cdot \tan 85^{\circ}\right)}\right.$.

OR

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A conical flask is full of mater. The flask was base $m$ radius $r$ and height $n$. the mater is poored into a cylindrical flask of base radius mr. find the height of water in the cylindrical flask.
[3]

OR

A cylinder, a cone and a hemisphere are of equal base and have the same height. What is the ratio of their volumes?
[3]

19
The diagonal $B D$ of a parallelogram $A B C D$ intersects the segment $A E$ at the point $F$, where $E$ is any point on the side $B C$. Prove that $D F \times E F=F B \times F A$.
[3]

OR

The perimeters of two similar triangles $A B C$ and $P Q R$ are respectively 36 cm and 24 cm . If $P Q=10$ $c m$, find $A B$.
[3]

20
In Fig, from an external point P, two tangents PT and PS are drawn to a circle with centre 0 and radius $r$. If $O P=2 r$, show that $\angle O T S=\angle O S T=30^{\circ}$.

[3]

21
A chord of a circle of radius 14 cm subtends $60^{\circ}$ at the centre. Find the area of the major sector. Like. Share. Bookmark. Download. Make Notes. Print - Your Favourite Questions. Join www.zigya.com

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The marks obtained by 40 students of class $X$ of a certain school in Science paper consisting of 10 marks are presented in the table below. Find the mean marks obtained by the students.

[3]

## Section D

23
Ramkali saved Rs. 5 in the first week of a year and then increased her weekly savings by Rs. 1.75, if in the nth week, her weekly savings became Rs. 20.75, find $n$.
[4]

24
Represent the following problem situations in the form of quadratic equations:
The area of a rectangular plot is $528 \mathrm{~m}^{2}$. The length of the plot (in metres) is one more than twice its breadth. We need to find the length and breadth of the plot.
[4]

OR

Represent the following problem situations in the form of quadratic equations:
The product of two consecutive positive integers is 306 . We need to find the integers.
[4]

25
Prove the following identities:
$(1+\cot \theta-\operatorname{cosec} \theta)(1+\tan \theta+\sec \theta)=2$.
[4]

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[4]

27
Two poles of heights 6 m and 11 m stand on a plane ground. If the distance between the feet of the poles is 12 m , find the distance between their tops.
[4]

OR

In an equilateral $A B C$, $D$ is a point on side $B C$ such that $B D=\frac{1}{3} B C$. Prove that $9 A D^{2}=7 A B^{2}$.
[4]

28
Construct a triangle $A B C$ in which $A B=5 \mathrm{~cm}, \angle B=60^{\circ}$ and altitude $C D=3 \mathrm{~cm}$. Construct a triangle $A Q R$ similar to $\triangle A B C$, such that each side of $\triangle A Q R$ is 1.5 times that of the corresponding side of $\triangle A B C$.
[4]

29
The angle of elevation of a jet plane from a point $A$ on the ground is $60^{\circ}$. After a flight of 15 seconds the angle of elevation changes to $30^{\circ}$. If the jet plane is flying at a constant height of $\mathbf{1 5 0 0} \sqrt{\mathbf{3}} \mathbf{~ m}$ find the speed of the jet plane.
[4]

30
Find the value of P , if the mean of the following distribution is 18.

[4]

OR

[^0]


[^0]:    The median of the following data is 52.5. Find the values of $x$ and $y$ if the total frequency is 100 . Like. Share. Bookmark. Download. Make Notes. Print - Your Favourite Questions. Join www.zigya.com

