Periodic Test –II [2019-20]
Class – X
Subject-Maths

me- 02 Hours

Student's Name - _____

MM - 40

Roll No - _____

General Instructions:-
1. All questions are compulsory.
2. The questions paper divided into four sections A,B,C and D.
3. 1-5 are multiple choice questions.
4. Select the most appropriate answer from the given options.

SECTION:-A

Q:-1 The roots of the equation $x^2-3x-m(m+3) =$, where m is a constant are

    (a) m, m+3   (b) –m , m+3   (c) m , -(m+3)

Q:-2 Which term of the A.P. 21,42,63,84 ---------is 210?

    (a) 9th (b) 10th (c) 11th (d) 12th

Q:- 3 The value of k for which the zeroes of polynomial

    $P(x) = 9x^2-12x+k$ are equal is

    (a) 1   (b) 2   (c) 3   (d) 4

Q:- 4 If one roots of $x^2+px+7 = 0$ is 7 then value of P is –

    (a) 6   (b) -6   (c) 7   (d) -7

Q:- 5 In $\triangle$ ABC, <B = 90 and BD $\perp$ AC, if AC = 9 cm and AD = 3cm then BD =

    (a) $2\sqrt{2}$ cm   (b) $3\sqrt{2}$ cm   (c) $2\sqrt{3}$ cm   (d) $3\sqrt{3}$ cm

Fill in the blanks –

Q:- 6 If H.C.F of 65 and 117 is expressible in the from 65m-117 the value of m is _____

Q:- 7 If a pair of linear equations is consistent, then the liner will be _____

Q:- 8 A ($\frac{M}{3}$,5) is the mid point of the line sequent joining the points Q (-6,7) and R(-2,3), then the value of m is

_____

Q:- 9 If $\sin\theta + \cos\theta = \sqrt{2} \sin (90^0-\theta)$, the value of $\tan\theta$ is _____

Q:- 10 The shadow of a tree is $\sqrt{3}$ times its height the angle of elevation of the sun is _____

[SECTION :B]

Q:- 11 Determine the ratio in which the line represented by equation $2x+y-4 = 0$ divides the line segment

A (2,-2) and B(3,7)

OR

The three vertices of a parallelogram ABCD, taken in order are A (5,6) , B (6,9) and C (3,6) . Find the

coordinates of the fourth vertex D.

Q.-12 From the top of a 100m high building , the angles of depression of the top and the bottom of a tower are

45^0 and 60^0 respectively. Find the height of the tower.

Q:- 13 There are 5 red, 4 black and 3 green balls in basket. A ball is taken out from the basket at random. Find
the probability of getting a
 (a)   black ball   (b) red or a green ball

OR

A box contain 80 discs which are numbered from 1 to 80. If one disc is drawn at random from the box, find

the probability that if bears a perfect square number.

Q:- 14 A card is drawn at random from a well shuffled pack of 52 cards. Find the probability that the card drawn

is neither a red card nor a queen.

[SECTION :C]

Q:- 15 In fig. diameter of biggest semicircle is 108m and diameter of the smallest circle is 36 m calculate area
of the shaded region.
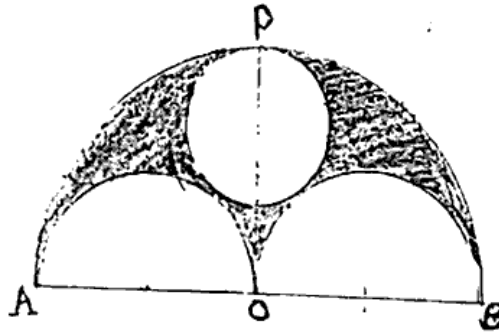
OR

(i) Find the area of the segment of a circle of radius 21cm which subtends an angle of 120^0 at the center.

(ii) In the given figure, a square O ABC is inscribed in a quadrant OPBQ. If OA = 20cm, find the area of the
shaded region ($\pi = 3.14$)
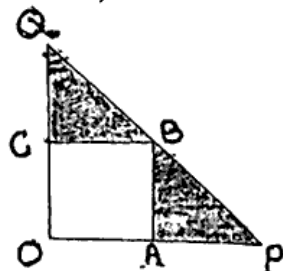
16 A well of diameter 3m, is dug 14m deep. The earth taken out of it has been spread evenly all around it a width of 4m, to form an embankment. Find the height of embankment

17(i) Find mean of the following data using step deviation method-

Class	0-10	10-20	20-30	30-40	40-50
Frequency	8	12	10	11	9

(ii) Given that the mode of the following distribution is 154 . Find missing frequency

Class	120-130	130-140	140-150	150-160	160-170	170-180
Frequency	2	8	12	F	8	7

Q:- 18(i) Find the area of the triangle formed by joining the mid-points of the sides of the triangle whose vertices are (0,-1), (2,1) and (0,3) . Find the ratio of this area to the area of the given triangle
(ii) If the points (1,2) , (-2,-10) and (3,p) are collinear, find the value of P.

Q:- 19 The angle of elevation of a jet plane from a point A on the ground is 60^0 , After a flight of 15 seconds, the angle of elevation to 30^0. If the jet plane is flying at a constant height $1500 \sqrt{3}$ m. Find the speed of the jet plane.

[SECTION:-D]

Q:- 20 A Metallic right circular cone 20cm high and whose vertical angle 60^0 is cut into two parts at the middle of its height by a plane parallel to its based. If the frustum so obtained be drawn into a wire of dia meter $\frac{1}{16}$ cm, find the length of the wire. https://www.mpboardonline.com

OR

A toy is in the form of cone of radius 3.5cm mounted on hemisphere of same radius. The total height of the toy is 15.5cm . Find the total surface area of toy.

Q:- 21 Draw less than and more than gives for the following distribution and hence obtain the median .

Marks	30-40	40-50	50-60	60-70	70-80	80-90	90-100
No. of students	14	6	10	20	30	8	12

OR

Find the median, mean and mode following data.

Class marks	65-85	85-105	105-125	125-145	145-165	165-185	185-205
Frequency	4	5	13	20	14	8	4

Q:- 22 The angle of elevation of a cloud from a point H metre above a lake is α and the angle of depression of its reflection in the lake is β prove that the height of the cloud is

$$h \left\{ \frac{tan\beta + tan\alpha}{tan\beta - tan\alpha} \right\}$$