

Practice Test 2019-20

Class : X

CH-1/200

Time: 3 hrs

Sub : MATHEMATICS BASIC

M.M. : 80

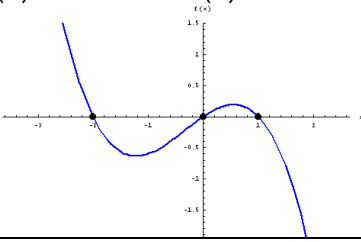
General Instructions:

- a) All questions are compulsory
- b) The question paper consists of 40 questions divided into four sections A, B, C & D.
- c) Section A comprises of 20 questions of 1 mark each. Section B comprises of 6 questions of 2 marks each. Section C comprises of 8 questions of 3 marks each. Section D comprises 6 questions of 4 marks each.
- d) There is no overall choice. However internal choices have been provided in two questions of 1 mark each, two questions of 2 marks each, three questions of 3 marks each and three questions of 4 marks each. You have to attempt only one of the alternatives in all such questions.
- e) Use of calculators is not permitted.

SECTION – A

Q 1- 10 are multiple choice questions. Select the most appropriate answer from the given options.

1	HCF of 462 and 294 is (a) 21 (b) 42 (c) 14 (d) 18	1
2	325 can be expressed as a product of its primes as (a) $5^2 \times 7$ (b) $5^2 \times 13$ (c) 5×13^2 (d) $2 \times 3^2 \times 5^2$	1
3	The sum of the zeroes of the polynomial $2x^2 - 10x + 8$ is (a) - 4 (b) 4 (c) - 5 (d) 5	1
4	The distance of the point P (5, - 12) from the origin is (a) 7 units (b) 5 units (c) 13 units (d) 12 units	1
5	The mid point of the line segment joining the points (- 6, 5) and (- 4, 3) is (a) (-5, 4) (b) (-1, 3) (c) (-1, 5) (d) (5, 4)	1

6	<p>The following figure shows the graph of $y = p(x)$, where $p(x)$ is a polynomial in variable x. The number of zeroes of the polynomial $p(x)$ is</p> <p>(a) 1 (b) 2 (c) 3 (d) 4</p> 	1
7	<p>One card is drawn from a well shuffled deck of 52 cards. The probability that it is red king is</p> <p>(a) $\frac{1}{52}$ (b) $\frac{1}{26}$ (c) $\frac{1}{13}$ (d) $\frac{3}{52}$</p>	1
8	<p>If a point P is 13 cm from the centre of the circle and the length of the tangent drawn from P to the circle is 12cm. Then the radius of the circle is</p> <p>(a) 3cm (b) 5cm (c) 7cm (d) 9cm</p>	1
9	<p>Which of the following is the decimal expansion of an irrational number</p> <p>(a) 4.561 (b) 0.1235785.....(c) $5.\overline{235}$ (d) 6.03</p>	1
10	<p>If $\triangle ABC \sim \triangle DEF$ such that $AB = 12$ cm and $DE = 14$ cm. the ratio of areas of $\triangle ABC$ and $\triangle DEF$.</p> <p>(a) 49 : 9 (b) 36 : 49 (c) 49 : 36 (d) 25 : 49</p>	1

(11 – 20) Fill in the blanks:

11	The point which divides the line segment joining the points A (0, 5) and B (5, 0) internally in the ratio 2:3 is _____	1
12	If the quadratic equation $x^2 - 2x + k = 0$ has equal roots, then value of k is _____.	1
13	The value of $\sin 60^\circ \cos 30^\circ - \sin 30^\circ \cos 60^\circ$ is _____.	1
14	The sides of two similar triangles are in the ratio 3:5, then the areas of these triangles are in the ratio _____	1
15	A line which intersects a circle at two distinct points is called a _____.	1

(16 – 20) Answer the following :

16	If $15 \tan A = 8$, then find value of $\sec A$.	1
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17	A dice is thrown once. Find the probability of getting a prime number.	1
18	Find the common difference of the A.P whose first term is 5 and fifth term is -7.	1
19	Find the area of quadrant of a circle whose diameter is 28cm. (use $\pi = \frac{22}{7}$)	1
20	In a triangle ABC, DE \parallel BC if AD=7.2cm , DB=2.4cm and AE=9cm then find EC.	1

SECTION – B

21	Given that HCF (306, 657) = 9, find LCM (306, 657).	2
22	In an AP a=3, n=8, S=192, find common difference d.	2
23	Find the distance between (a,b) and (-a,-b).	2
24	If $\tan 2A = \cot (A - 18^\circ)$, where 2A is an acute angle, find the value of A.	2
25	Draw a circle and two parallel lines such that one is a tangent and the other is a secant to the circle.	2
26	Two dice are thrown simultaneously at random. Find the probability of getting a sum of 10.	2

SECTION – C

27	Find the zeroes of the quadratic polynomial $x^2-3x-10$ and verify the relationship between the zeroes and coefficient	3
28	Draw a line segment of length 9 cm and divide it in the ratio 3:5 OR Draw a circle of radius 3.5 cm. From the point 9 cm away from its centre, construct the pair of tangents to the circle.	3

29	Prove that $5 + 2\sqrt{3}$ is irrational.	3
30	Find the area of a triangle whose vertices are (1,-1), (-4,6) and (-3,-5).	3
31	Prove that the lengths of tangents drawn from an external point to a circle are equal.	3
32	Prove that $\frac{1-\cos \theta}{1+\cos \theta} = (\operatorname{cosec} \theta - \cot \theta)^2$	3
33	Solve $2x + 3y = 11$ and $x - 2y = -12$ and hence find the value of 'm' for which $y = mx + 3$.	3
34	Find the coordinates of the point which divides the line joining (-1,7) and (4,-3) in the ratio 2:3	3

SECTION D

35	Find all the other zeroes of the polynomial $P(x) = x^4 + 3x^3 - x^2 - 9x - 6$ if two of its zeroes are $\sqrt{3}$ and $-\sqrt{3}$.	4
36	The first term of an A.P. is 5, the last term is 45 and sum is 400. Find the number of terms and the common difference.	4
37	State and prove Pythagoras theorem.	4
38	Draw a triangle ABC with side $BC = 7$ cm, $\angle B = 45^\circ$, $\angle A = 105^\circ$. Then, construct a triangle whose sides are $\frac{4}{3}$ times the corresponding sides of ΔABC .	4
39	The angle of elevation of the top of a building from the foot of the tower is 30° and the angle of elevation of the top of the tower from the foot of the building is 60° . If the tower is 50 m high, find the height of the building.	4
40	A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 3, 4, 5, 6, 7, 8 (see Fig. 15.5), and these are equally likely outcomes. What is the probability that it will point at (i) 8 ? (ii) an odd number? (iii) a number greater than 2? (iv) a number less than 9?	4