ISWK Term-1 Practice Examination

Subject Code No. 241/ **BASIC**

SET- 1

Roll No.

Candidates must write the Code on the title page of the answer-book.

- Please check that this question paper contains 9 printed pages.
- Please check that this question paper contains 50 questions.
- 20 minutes time has been allotted to read this question paper. The question paper will be distributed at 09.40 a.m. From 09:40 a.m. to 10.00 a.m., the students will read the question paper only and plan a proper strategy to attempt the questions.

Class X

Session: 2021-22, Term - 1

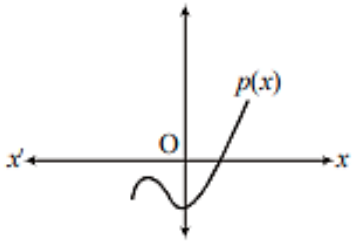
Mathematics Basic (241)

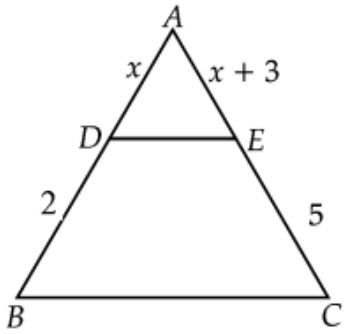
Time Allowed: 90 minutes

Maximum Marks: 40 **Date: 02/11/2021**

General Instructions:

1. **The question paper contains three parts A, B and C. Each part is compulsory.**
2. **Section A consists of 20 questions of 1 mark each (MCQ's). Any 16 questions are to be attempted.**
3. **Section B consists of 20 questions of 1 mark each (MCQ's). Any 16 questions are to be attempted.**
4. **Section C consists of 10 questions based on two CASE STUDIES. Attempt any 8 questions.**
5. **There is NO NEGATIVE marking.**

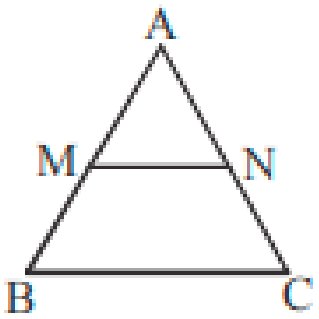
Section A								
Section A consists of 20 questions. Any 16 questions are to be attempted								
Q.1.	The LCM of smallest composite number and the smallest prime number is							
	A	2	**B**	1	**C**	4	**D**	3
Q.2.	The distance between the points (3, – 2) and (– 3, 2) is							
	A	$\sqrt{52}$ units	**B**	$4\sqrt{10}$ units	**C**	$2\sqrt{10}$ units	**D**	40 units
Q.3.	Sides of two similar triangles are in the ratio 4 : 9. Areas of these triangles are in the ratio							
	A	4 : 9	**B**	2 : 3	**C**	81 : 16	**D**	16 : 81
Q.4.	The number of zeroes of the polynomial p(x) shown in fig, are 							
	A	3	**B**	2	**C**	1	**D**	0
Q.5.	The value of k for which the equations 3x – y + 8 = 0 and 6x + ky = – 16 represent coincident lines, is							
	A	$-\frac{1}{2}$	**B**	$\frac{1}{2}$	**C**	2	**D**	-2
Q.6.	One card is drawn at random from a well – shuffled deck of 52 cards. What is the probability of getting a Jack?							
	A	$\frac{3}{26}$	**B**	$\frac{1}{52}$	**C**	$\frac{1}{13}$	**D**	$\frac{3}{52}$
Q.7.	A bag contains 3 red, 5 black and 7 white balls. A ball is drawn from the bag at random. The probability that the drawn is not black, is							
	A	$\frac{1}{3}$	**B**	$\frac{3}{5}$	**C**	$\frac{1}{2}$	**D**	$\frac{2}{3}$

Q.8.	120 can be expressed as a product of its prime factors a							
	A	5 x 8 x 3	**B**	15 x 2^3	**C**	10 x 2^2 x 3	**D**	5 x 2^3 x 3
Q.9.	If the centre of a circle is (3, 5) and end points of a diameter are (4, 7) and (2, y), then the value of y is							
	A	3	**B**	-3	**C**	7	**D**	4
Q.10.	The value of θ for which cos (10° + θ) = sin 30°, is							
	A	50°	**B**	40°	**C**	80°	**D**	20°
Q.11.	HCF of two numbers is 27 and their LCM is 162. If one of the number is 54, then the other number is							
	A	36	**B**	35	**C**	9	**D**	81
Q.12.	If 5 tanθ = 12, then $\frac{13 \sin \theta}{3}$ is							
	A	2	**B**	4	**C**	12	**D**	1
Q.13.	The decimal expansion of $\frac{23}{2^5 \times 5^2}$ will terminate after how many places of decimal?							
	A	2	**B**	4	**C**	5	**D**	1
Q.14.	In ΔABC, if DE ‖ BC, then the value of x is 							
	A	4	**B**	2	**C**	3	**D**	6

Q.15.	The quadratic polynomial whose sum of zeroes is 3 and product of zeroes is -2 is							
	A	x^2 + 3x - 2	**B**	x^2 - 2x + 3	**C**	x^2 - 3x + 2	**D**	x^2 - 3x - 2
Q.16	Cards are marked with numbers 1 to 25 are placed in the box and mixed thoroughly. What is the probability of getting a number divisible by 5?							
	A	1	**B**	0	**C**	$\frac{1}{25}$	**D**	$\frac{1}{5}$
Q.17.	If 2 and α are the zeroes of $2x^2$ – 6x + 2, then the value of α is							
	A	2	**B**	3	**C**	1	**D**	5
Q.18.	The pair of equations 4x + 6y = 9 and 2x + 3y = 6 has							
	A	no solution	**B**	many solutions	**C**	two solutions	**D**	one solution
Q.19.	If $\sin\theta = \frac{1}{3}$, the value of $2cot^2\theta$ + 2 is							
	A	16	**B**	20	**C**	12	**D**	18
Q.20.	The area of the square that can be inscribed in a circle of radius 8cm is							
	A	$256cm^2$	**B**	$128cm^2$	**C**	$64\sqrt{2}cm^2$	**D**	$64cm^2$
Section B								
Section B consists of 20 questions of 1 mark each. Any 16 questions are to be attempted								
Q.21.	The zeroes of the quadratic polynomial $6x^2$ – 3 – 7x are							
	A	$\frac{3}{2}, -\frac{1}{3}$	B	$\frac{2}{3}, \frac{1}{3}$	C	$\frac{3}{5}, -\frac{3}{7}$	D	$\frac{1}{3}, -\frac{1}{3}$
Q.22.	The area of the sector of a circle with radius 14cm and central angle 45° is							
	A	$76cm^2$	**B**	$77cm^2$	**C**	$66cm^2$	**D**	$55cm^2$
Q.23.	The largest number which divides 70 and 125 leaving remainders 5 and 8 respectively is							
	A	13	**B**	35	**C**	875	**D**	1750

Q.24	144 cartons of Coke cans and 90 cartons of Pepsi cans are to be stacked in a canteen. If each stack is of the same height and is to contain cartons of the same drink, what would be the greatest number of cartons each stack would have?							
	A	36	**B**	18	**C**	45	**D**	12
Q.25.	If a pair of equations is consistent, then the graph of the lines will be							
	A	parallel	**B**	intersecting	**C**	intersecting or coincident	**D**	always coincident
Q.26.	The father's age is six times his son's age. Four years hence, the age of father will be four times his son's age. Then the present age of father is							
	A	40	**B**	30	**C**	42	**D**	36
Q.27.	A pendulum swings through an angle of 30° and describes an arc 8.8cm is length. The length of the pendulum is							
	A	17.2cm	**B**	16.8cm	**C**	16.4cm	**D**	18.6cm
Q.28.	If α and β are the zeroes of the polynomial x^2 – x – 4, then the value of $\frac{1}{\alpha} + \frac{1}{\beta} - \alpha\,\beta$ is							
	A	$\frac{15}{4}$	**B**	$\frac{-15}{4}$	**C**	4	**D**	15
Q.29	If 2x + 3y = 11 and x – 2y = -12, then the value of 'm' for which y = mx + 3 is							
	A	1	**B**	-1	**C**	2	**D**	-2
Q.30.	The value of $(1 + tan^2\theta)(1 - \sin\theta)(1 + \sin\theta)$ is							
	A	0	**B**	1	**C**	2	**D**	8
Q.31	If seven books and 5 pens costs ₹410, whereas five books and seven pens costs ₹334, then the costs of three books and four pens would be							
	A	₹ 135	**B**	₹ 145	**C**	₹ 255	**D**	₹ 198

Q.32.	If $\frac{2}{x} + \frac{3}{y} = 13$ and $\frac{5}{x} - \frac{4}{y} = -2$, then x + y is equal to							
	A	$\frac{1}{6}$	**B**	$-\frac{1}{6}$	**C**	$\frac{5}{6}$	**D**	$-\frac{5}{6}$
Q.33	The perimeter of a quadrant of a circle of radius $\frac{7}{2}$ cm is [Take $\pi = \frac{22}{7}$]							
	A	12.5 cm	**B**	3.5 cm	**C**	7.5 cm	**D**	5.5 cm
Q.34	Which of the following cannot be the probability of an event?							
	A	$\frac{1}{4}$	**B**	0	**C**	$-\frac{1}{2}$	**D**	0.8
Q.35	If $\sin(A - B) = \frac{1}{2}$, $\cos(A + B) = \frac{1}{2}$; $0° < A + B \leq 90°$, $A > B$, then A and B are respectively							
	A	45° , 15°	**B**	60°, 30°	**C**	45°, 30°	**D**	30° , 15°
Q.36	The radii of two circles are 8cm and 6cm respectively. The radius of the circle having area equal to sum of the areas of two circles is							
	A	5cm	**B**	10cm	**C**	12cm	**D**	15cm
Q.37	If the point P(k, 0) divides the line segment joining the points A(2, -2) and B(-7, 4) in the ratio 1 : 2, then the value of k is							
	A	1	**B**	2	**C**	-1	**D**	-2

Q.38	In the given fig, MN ∥ BC and AM : MB = 1 : 2, then $\frac{ar\ (\Delta\ AMN)}{ar\ (\Delta\ ABC)}$ is 							
	A	$\frac{1}{4}$	**B**	$\frac{1}{9}$	**C**	$\frac{1}{3}$	**D**	$\frac{1}{2}$
Q.39	$\frac{\sin\theta - 2sin^3\theta}{2cos^3\theta - cos\theta}$ =							
	A	$sin\theta$	**B**	$cos\theta$	**C**	$tan\theta$	**D**	$cot\theta$
Q.40	If a pair of dice is thrown, the probability of getting a sum of 10 is							
	A	$\frac{1}{12}$	**B**	$\frac{1}{36}$	**C**	$\frac{1}{9}$	**D**	$\frac{1}{4}$

SECTION C

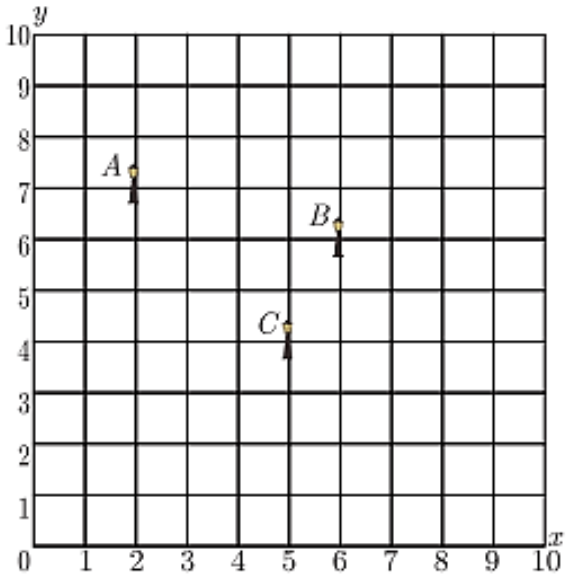
Case study based questions

Section C consists of 10 questions of 1 mark each. Any 8 questions are to be attempted.

CASE STUDY 1:

Resident Welfare Association (RWA) of a Gulmohar Society in Delhi have installed three electric poles A, B and C in a society's common park. Despite these three poles, some parts of the park are still in dark. So, RWA decides to have one more electric pole D in the park.

The park can be modelled as a coordinate system given below.



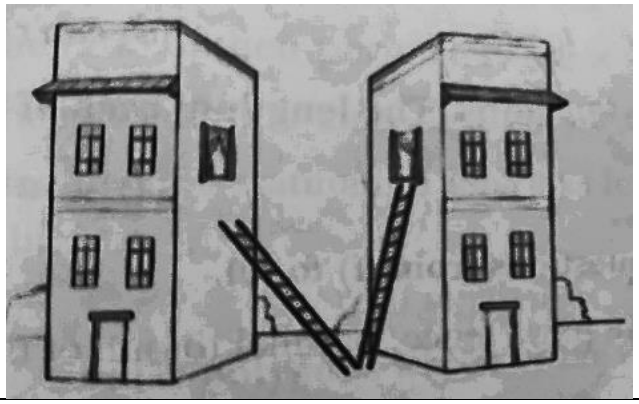
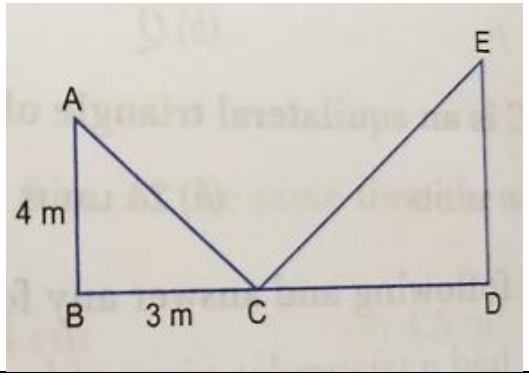
On the basis of the above information, answer any four of the following questions.

Q.41 What is the position of the pole C?

	A	(4, 5)	**B**	(5, 4)	**C**	(6, 5)	**D**	(5, 6)

Q.42 What is the distance of the pole B from the corner O of the park?

	A	$6\sqrt{2}$ units	**B**	$3\sqrt{2}$ units	**C**	$6\sqrt{3}$ units	**D**	$3\sqrt{3}$ units

Q.43	Find the position of the fourth pole D so that four points A, B C and D form a parallelogram.							
	A	(5, 2)	**B**	(1, 5)	**C**	(1, 4)	**D**	(2, 5)
Q.44	What is the distance between poles A and C?							
	A	$6\sqrt{2}$ units	**B**	$3\sqrt{2}$ units	**C**	$6\sqrt{3}$ units	**D**	$3\sqrt{3}$ units
Q.45	What is the distance between poles B and D?							
	A	$2\sqrt{3}$ units	**B**	$\sqrt{28}$ units	**C**	$6\sqrt{3}$ units	**D**	$\sqrt{26}$ units
	CASE STUDY 2: A ladder was placed against a wall such that its top touches a point 4m above the ground. The distance of the foot of the ladder from the bottom of the ground was 3m. Keeping its foot at the same point, Akshay turns the ladder to the opposite side so that it reached the window of his house.  							
Q.46	The theorem used to find the length of the ladder is							
	A	Thales theorem	**B**	Converse of Thales theorem	**C**	Pythagoras theorem	**D**	Converse of Pythagoras theorem
Q.47	The length of the ladder, in metre is							
	A	4m	**B**	5m	**C**	9m	**D**	2m

Q.48	If the window of the house is 3m above the ground, then the distance of the point C from D is							
	A	3m	**B**	4m	**C**	5m	**D**	3.5m
Q.49	Which of the following does not form a Pythagorean triplet?							
	A	(7, 24, 25)	**B**	(15, 8, 17)	**C**	(5, 12, 13)	**D**	(21, 20, 28)
Q.50	If an isosceles right triangle PQR is right angled at P, then							
	A	$QR^2 = 2PQ^2$	**B**	$QP^2 = 2PR^2$	**C**	$QP^2 = 2QR^2$	**D**	$PR^2 = 2QR^2$

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