QUARTELY EXAMINATION- 2023 **A**

ANSWER KEY

Class: IX **MATHEMATICS** **Marks: 100**

Part – I **14×1=14**

Q.N0	Option	Key answers	Marks allotted
1	**B**	**A=B**	**1**
2	A	5	1
3	D	$\emptyset$	1
4	C	8	1
5	B	May be a rational or irrational numbers	1
6	D	π	1
7	C	$5\sqrt{3}$	1
8	A	$\sqrt{3}$	1
9	D	50	1
10	C	$\frac{2}{3}$	1
11	A	13	1
12	C	$x^2 - y^2$	1
13	A	-36	1
14	B	Interior oppos e angles	1

PART -II **(10×2=20)**

(Q NO.28 -COMPULSORY)

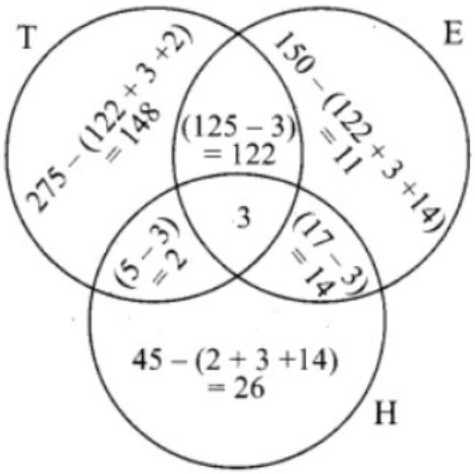
Q.NO	KEY ANSWERS	MARKS ALLOTED
15	{A,S,E M,N,T} {P,R,I,N,C,A,L}	1 1
16	(i) A∩B ={m,o} (ii) B∩A= {m,o,}	1 1
17	n(A∩B)=15 n(U)=65	1 1

18	$\frac{9}{40'}\ \frac{19}{80'}$	2
19	$x = 2.\overline{124} = 2.124124$ 1000 x=2124.124 $x = \frac{2124}{999}$	 1 1
20	$\sqrt{30}$	2
21	$\frac{1}{\sqrt{50}} \times \frac{\sqrt{2}}{\sqrt{2}}$ $\frac{\sqrt{2}}{10}$	1 1
22	i) 9.768854×10^{6} ii) 4.567891×10^{-2}	1 1
23	$x^3 - 8x^2 + 11x + 7$	2
24	1 + 2023 2024	1 1
25	$(a+b+c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$ $x^2 + 4y^2 + 9z^2 + 4xy + 12yz + 6xz$	1 1
26	G.C.D = $7xyz^2$	2
27	$x - 89°$	2
28	$A \Delta B = (A - B) \cup (B - A)$ $A \Delta B = \{6,7,9,10,12\}$	1 1

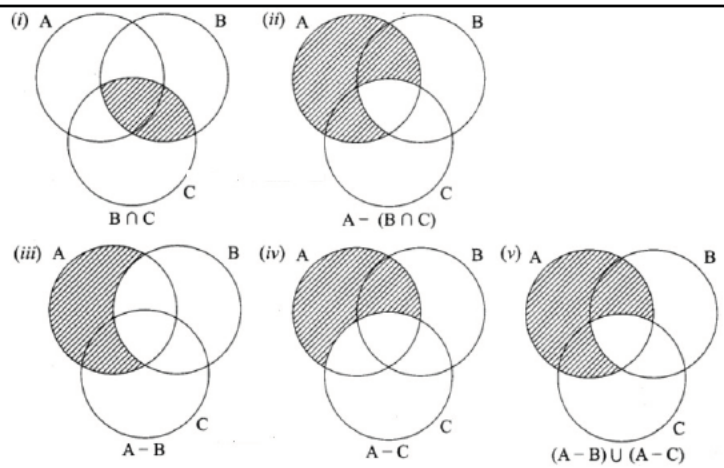
PART -III

(Q.No. 42 is compulsory) **10×5 =50**

29	i) A' = {a,c,e,g} ii) $B' = \{b, c, f, g\}$ iii) $A' \cup B' = \{a, b, c, e, f, g\}$ iv) $A' \cap B'$ = {c g v) $(B')'$ = {a,d,e,h}	1 1 1 1 1

30	A={0,2,4,6,8} B={2,3,5,7} C ={5,6 7 8} B∩C = {5,7} AU(B∩C)={0,2,4,5,6,7,8} (AUB)∩(AUC)= {0,2,4,5,6,7,8}	1 1 1 2
31	 i) 185 ii) 141 iii) 326	1 1 1 2 1 1 1
32	FOR EACH NUMBER LINE (1 MARK) PLOTTING NUMBER	4 1
33	a) i) 2^5 ii) $(2^{\frac{1}{2}})^3$ or $2^{\frac{3}{2}}$ b) 243	1 1 3
34	L.C M 12 $\sqrt[3]{2} = \sqrt[12]{16}$ $\sqrt[3]{4} = \sqrt[12]{4096}$ $\sqrt[4]{3} = \sqrt[12]{27}$ Ascending order : $\sqrt[3]{2}, \sqrt[4]{3}, \sqrt[3]{4},$	1 1 1 1 1
35	$\frac{\sqrt{7}-2}{\sqrt{7}+2} \times \frac{\sqrt{7}-2}{\sqrt{7}-2}$	1 1

	$=\frac{(\sqrt{7}-2)^2}{(\sqrt{7})^2-2^2}$ $\frac{7+4-4\sqrt{7}}{7-4}=\frac{11-4\sqrt{7}}{3}$ $a=\frac{-4}{3}$ $b=\frac{11}{3}$	1 2
36	(x-2) is a factor synthetic division other fctors are (x+3) ,(x-4)	1 2 2
37	3x-4y-10 =0 : 4x + 3y -5 =0 Cross multiplicat on $\frac{x}{50}=\frac{y}{-25}=\frac{1}{25}$ Solution x=2 y=-1	1 1 1 1
38	x + y = 12 → (1) 2x – y = 3 → (2) X=5 Y=7 Fraction $=\frac{5}{7}$	1 1 1 1 1
39	$4y^2 - 6y + 5$ $2y - 1 \overline{)\ 8y^3 - 16y^2 + 16y - 15}$ $8y^3 - 4y^2$ (–) (+) $-12y^2 + 16y$ $-12y^2 + 6y$ (+) (–) $10y - 15$ $10y - 5$ (–) (+) -10 ∴ The quotient = $4y^2 - 6y + 5$ The remainder = -10	2 2 1

40	$x^2 + \frac{1}{x^2} = (x + \frac{1}{x})^2 - 2$ $(x + \frac{1}{x}) = 4$ $x^3 + \frac{1}{x^3} = (x + \frac{1}{x})^3 - 3(x + \frac{1}{x})$ $4^3 - 3(4)$ 52	1 1 1 1 1
41	$(x+35)^\circ + (2x-5)^\circ = (4x-15)^\circ$ $X=45^\circ$ $\angle A = 80^\circ$ $\angle B = 85^\circ$ $\angle C = 15^\circ$	1 1 1 1
42		2 3

PART -IV

Q.No	Key answer	Marks allotted
43	Rough diagram Construction of triangle Construction of centroid	1 4 3
	Rough diagram Construction of triangle Construction of altitudes Loca ing orthocentre	1 4 2 1

<table>
<tr><th>Q.N0</th><th>Key answer</th><th>Marks allotted</th></tr>
<tr><td>44</td><td>
<table>
<tr><td>X</td><td>-1</td><td>0</td><td>1</td></tr>
<tr><td>Y</td><td>-4</td><td>-1</td><td>2</td></tr>
</table>
Points to be plotted :(-1,-4),(0,-1), (1,2)
Scale
Joining the point</td><td>4
2
1
1</td></tr>
<tr><td></td><td>plotting th points
Joining the points
Scale
<table>
<tr><td>X</td><td>-1</td><td>0</td><td>1</td></tr>
<tr><td>y</td><td>-1</td><td>0</td><td>-1</td></tr>
</table>
Y=-3
<table>
<tr><td>X</td><td>-1</td><td>0</td><td>1</td></tr>
<tr><td></td><td>-3</td><td>-3</td><td>-3</td></tr>
</table>
Solution (-3, -3)</td><td>2
1
1
1
1
1
1</td></tr>
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