ANNEXURE-C

## DAV PUBLIC SCHOOLS, ODISHA, ZONE PERIODIC ASSESSMENT – II (2023 – 24)

## MARKING SCHEME

QES NO.	VALUE POINTS	Marks Allotted	PAGE NO OF NCERT/ TEST BOOK
1	(a) 420	1 mark	P-2
2	$(C)\frac{x^2}{2} - \frac{x}{2} - 6$	1 mark	p-21
3	b. Any real value other than -2	1 mark	p-36
4	(c) intersecting or coincident	1 mark	p-29
5	(b) 30°	1 mark	p-121
6	(a) 3 cm	1 mark	p-147
7	c) 1/6	1 mark	p-207
8	d) 231 cm <sup>2</sup>	1 mark	p-197
9	d) PA=4 cm	1 mark	p-149
10	c) $\frac{3}{8}$	1 mark	p-210
11	d) 4 cm	1 mark	p-84
12	a) 7 cm	1 mark	p-158
13	(b) similar	1 mark	p-78
14	c)3	1 mark	p-181
15	(c) 1	1 mark	p-127
16	b) 1	1 mark	p-127
17	d) 132 cm	1 mark	p-197
18	(c) $3\text{median} = 2\text{mean} + \text{mode}$	1 mark	p-155
19	(c) A is true but R is false	1 mark	p-7
20	a)Both A and B are true and R is the correct explanation of A	1 mark	p-21
	SECTION-B		
21	PQ  RS [Given] ∠P=∠S [Pair of alternate angles] and ∠Q=∠R [Pair of alternate angles] Also, ∠POQ=∠SOR [Vertically opposite angles] ∴ΔPOQ~ $\Delta$ SOR [AAA similarity criterion]	1 mark 1 mark	p-91
22	$AP = AS \dots(i) \text{ [tangents from A]}$ $BP = BQ \dots(ii) \text{ [tangents from B]}$ $CR = CQ \dots(iii) \text{ [tangents from C]}$ $DR = DS \dots(iv) \text{ [tangents from D]}$ Therefore, $AB + CD = (AP + BP) + (CR + DR)$ = (AS + BQ) + (CQ + DS) = (AS + DS) + (BQ + CQ) = (AD + BC).	1 mark 1 mark	p-152
23	SinA=4/5 ,Cos A=3/5 and Tan A=4/3 cosA+tanA=29/15 Or	1 mark 1 mark	p-127

	$\frac{\sin 30^{0} + 2\cos^{2} 45^{0} + \tan^{2} 60^{0}}{\frac{1}{2}\cot 45^{0} + \cos^{2} 30^{0} + \tan^{2} 45^{0}} = \frac{\frac{1}{2} + 1 + 3}{\frac{1}{2} + \frac{3}{4} + 1} = 2$	1+1 Marks	
24	Number multiple of 4 are 4,8,12 P=3/15 Or P=2/52	1 mark 1 mark 2 mark	p-215
25	$\frac{4\sin\theta - \cos\theta}{4\sin\theta + \cos\theta} = \frac{4x^3/4 - 1}{4x^3/4 + 1} = \frac{2}{4}$	1 mark	p-127
		1 mark	
	SECTION-C	ı	
26	The time of their meeting is the LCM of 18 and 12 in minutes. Prime factorization of 18=2×3×3	1 mark	р-б
	Prime factorization of 12=2×2×3	1 mark	
	Hence, LCM of 18, 12=2×3×3×2=36	1 mark	
	Sonia and Ravi meet after 36 minutes.	THIGK	
27	$\begin{array}{c} x^{2}-6x+5 = x^{2}-5x-x+5 \\ = (x-5)(x-1)=0 \\ X=5 \text{ Or } 1 \\ \text{ Or } \\ Product = c/a \\ a=0 \end{array}$	1 mark 1 mark 1 marks	p-21
28	Let the digits at units and tens place of the given number be a and b respectively. Its value is $10a + b$ a + b = 9 (1) Also 9(10a + b) = 2(10b+a) 8a - b = 0 (2) Solving, we get $a = 1, b = 8$	1 mark 1 mark	p-36
	Hence our number is 18	1 mark	

r		1	1
29	$\frac{\tan A}{1 + \sec A} - \frac{\tan A}{1 - \sec A} = 2 \cdot \operatorname{cosec} A$		p-131
	$1 + \sec A$ $1 - \sec A$		
	L.H.S tan A tan A		
	$\frac{\tan A}{1 + \sec A} - \frac{\tan A}{1 - \sec A}$		
	$=rac{ an A(1- \sec A) -  an A(1+ \sec A)}{1- \sec^2 A}$	1 mark	
	= 1 – sec <sup>2</sup> A		
	$=\frac{\tan A(1 - \sec A - 1 - \sec A)}{-\tan^2 A}$		
	$-\tan A$	1 mark	
	$-2 \sec \mathrm{A}$		
	$=rac{-2 \sec A}{-\tan A}$		
	$=rac{2\cdot 1/\mathrm{cosA}}{\mathrm{sin}\mathrm{A}/\mathrm{cosA}}$		
	$\sin A/\cos A$	1 mark	
	$=\frac{2}{\sin A}$		
	=2 cosec A (RHS)		
	$OR = \frac{\sec\theta + \tan\theta - 1}{2}$		
	$=\frac{\sec \theta + \tan \theta - 1}{\tan \theta - \sec \theta + 1}$	1 mark	
	$= \frac{\sec\theta + \tan\theta - (\sec^2\theta - \tan^2\theta)}{\tan\theta - \sec\theta + 1}  \left\{ \because \sec^2\theta - \tan^2\theta = 1 \right\}$		
	$(\sec\theta + \tan\theta)[1 - (\sec\theta - \tan\theta)]$		
	$= \frac{(\cos\theta + \tan\theta)(1 - (\cos\theta + \tan\theta))}{\tan\theta - \sec\theta + 1}$	1 mark	
	$(\sec\theta + \tan\theta)(1 - \sec\theta + \tan\theta)$		
	$= \frac{(6000 + (anto))^2}{\tan \theta - \sec \theta + 1}$		
	$= \sec \theta + \tan \theta = \frac{1}{\cos \theta} + \frac{\sin \theta}{\cos \theta}$	1 mark	
	$\cos\theta$ $\cos\theta$		
30	For correct figure	1 mark	p-149
21	Correct proof Model Class=40.60	2 marks	
31	Modal Class=40-60 Correct Formula	1 mark 1 mark	p-187
	Correct value of Mode	1 mark	
32	Let us consider √2 is rational.		p-9
	√2 = p/q.		
	(where p and q are co-prime number and $q \neq 0$ )		
	Squaring on both sides give,		
	$2 = p^2/q^2$		
	$2q^2 = p^2$		
	From this we can say that 2 divides $p^2$ so 2 will also divide p.	1	
	So, 2 is one of the factor of p.	1 mark	
1	So we can write,		

			,
	p = 2a Therefore, 2q <sup>2</sup> = (2a) <sup>2</sup>	1 mark	
	$2q^{2} = 4a^{2}$ $q^{2} = 2a^{2}$		
	From this we can say that 2 divides q <sup>2</sup> so 2 will also divide q. So, 2 is one of the factor of q.		
	As, we know p and q are co-prime so it cannot have	1 mars	
	common factor. But here a contradiction arise that 2 is factor of both p and q.		
	So, by this we can say that $\sqrt{2}$ is not rational which means $\sqrt{2}$ is irrational.		
	Sum of rational and irrational is irrational and for correct	2 marks	
	proof.		
33	Statement Figure, to prove, construction Correct proof Or	1 mark 1mark 3 mark	p-80
	In ΔABC, AB   EF		p-73
	$\therefore \Delta ABC$ is similar to $\Delta EFC$ [AA similarity criterion]		NCERT
	$\therefore \frac{AB}{EF} = \frac{BC}{FC} \Rightarrow \frac{a}{h} = \frac{p}{FC}$		EXAMPLER
	$\therefore FC = \frac{ph}{a} \dots (1)$	1.5 marks	
	In $\Delta BCD$ , EF   DC		
	$\therefore \Delta DCB$ is similar to $\Delta EFB$ [AA similarity criterion]		
	$\therefore \frac{DC}{EF} = \frac{BC}{FB} \Rightarrow \frac{b}{h} = \frac{p}{FB}$		
	$\therefore FB = \frac{ph}{b} \dots (2)$ Adding (1) and (2),	1.5marks	
	$FC + FB = \frac{ph}{a} + \frac{ph}{b}$		
	$\therefore p = ph\left[\frac{a+b}{ab}\right] \qquad \qquad$		
	$\therefore h = \frac{ab}{a+b}$	2 mark	

34	Let cost of one ba	it be Rs <i>x</i> Let cost of one b	ball be Rsy	1 mark	p-33
	ATQ $4x + 1y = 2050$ (1)				-
	3x + 2y = 1600 (2)			1 mark	
	from (1)4 $x$ + 1 $y$ = 2050				
	y = 2050 - 4x			1 mark	
	Substitevalue of yin (2) $3x + 2(2050 - 4x) = 1600$				
	3x + 4100 - 8x = 1600				
	-5x = -2500				
	-5x = -2500 x = 500				
	Substitutevalue of xin (1) $4x + 1y = 2050$				
	4(500) + y = 2050			1 mark	
	2000 + y = 2050				
	<i>y</i> = 50				
	Hence Cost of one bat = Rs. 500			1 mark	
	Cost of one ball =	Cost of one ball = Rs. 50			
		(OR)			
	Let the fixed char	ge for first 3 days= Rs. x			
		And additional charge after 3 days= Rs. $y$ ATQ $x + 4y = 27$ (1)			
	-				
	x + 2y = 21(2)				
	Subtract eqn (2) from (1) $2y = 6$				
	-	<i>y</i> = 3			
	Substitute value of y in (2) $x + 2(3) = 21$				
	<i>x</i> = 21 – 6				
	<i>x</i> = 15				
		- ixed charge= Rs. 15 Addi	tional charge per day = Rs. 3		
35		-		1 mark	p-198
55	CI	F	$C_f$		p-170
	0 - 10	5	5		
	0 - 10	5	5	1 mark	
				1 mark	
	10 - 20	X	5+x		
			_		
	20 - 30	20	25+ x		
	30 - 40	15	40 + x		
	50 - 40	13	$40 \pm x$		
	40 - 50	у	40 + x + y		
		5			
		5	45 + x + y		
	5060				
	Total num	bor = 60			
	Total number = 60 45+x+y = 60, x+y = 15 Median 28.5, median class 20 – 30, 1 = 20, c <sub>f</sub> = 5+x, f =20 Median = $1 + \frac{\frac{n}{2} - c_f}{f} x h$ On solving we got x =8 x = 7				
				1 mark	
				1 mark	
				1 mark	
				Tungk	
	y = 7				
	SECTION – E				
36					n 23
30				1 mark	p-23
	(a) 2			TUIGLK	
	(b) - 2, 4				
1	(0) 2, 1				

	(c) $x^2 - 3\sqrt{3x} + 6$ OR +1, -1	1 mark 2 marks	
37	(a) 2/52 (b) 12/52 (c) 28/52 Or 44/52	1 mark 1 marks 2 marks	p-207
38	(a) $36^{0}$ (b) $4.4$ cm (c) $114$ cm Or 15.4cm <sup>2</sup>	1 mark 1 mark 2 marks	p-159

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