


DISA PHYSICS MODEL EXAMINATION 2022

ANSWER KEY PHYSICS (Tirur Educational District) Set A

Question No	section	answer point	score			total	SECTION TOTAL
1		Tin and Lead	1				
2		The resistance of the coil of the heaters with high power is less.	1				
3		50Hz	1		4		
4		0°	1				
5		46°	1			7	7
6		The deviation of the colour with longest wavelength is less.	1				
7		Fleming's Left hand law	1				
8		5	1		3		
9		25 cm	1				
10	a	Electrical energy to sound energy	1		2	2	
	b	motor principle	1				
11	a	Connecting electrical circuit to earth for safety of circuit is earthing or any relevant answer	1		2	2	4
	b	Any two relevant two points (1/2 score for each)	1				
12		Any two relevant two points (1score for each)	1+1		2		
13	a	Direction of electric current clockwise - South pole or any relevant answer	1	3	3		
	b	Increase number of turns in the coil, increase the intensity of current, or any relevant answer	1+1				
14	a	Step up transformer	1				
	b	Electromagnetic induction/Mutual induction	1	3	3	9	
	c	More current in the secondary or any correct answer	1				12
15	a	$P = 1/f$ or $(P = 1/u + 1/v)$	1				
	b	1/2.5 or 4 Dioptre (unit is not compulsory)	1	3	3		
		power decreased or any other correct answer	1				
16	a	Red	1				
	b	correct explanation(two refraction and one internal reflection) 1+1	2	3	3		
17	a	Tungsten	1				
	b	High melting point/High resistivity or any correct two points (1+1)	2	3	3	3	
18	a	Parallel connection	1				
	b	3 Ω	1	4	4		
	c	Correct figure with labeling Full credit (only Resistors series one score only)	2				
19	a	Between F and 2F	1				
	b	Beyond 2F	1	4	4		
	c	Copying the figure 1/2, Refracted ray through focus 1/2, direct ray from optic centre 1/2 marking the image 1/2	2			8	
20	a	Concave mirror	1				
		$1/u + 1/v = 1/f$ or $f = uv/u+v$	1	4	4		
		U = -40 cm, V = - 20 cm	1				
		Magnification = $-20/-40 = -1/2$ or - 0.5	1				12
21	a	To measure electrical energy usage	1				
	b	Kilo watt Hour(kwh)	1	4	4		
	c	Main fuse,Main switch, ELCB, MCB distribution board,	2				

22	a	$\sin(i) / \sin(r) = \text{a constant}$	1				
	b	The refractive index of a medium with respect to vacuum is called absolute refractive index.	1	4	4	4	
	c	Refractive index = v_1/v_2 1score correct Substitution or correct answer (1.5) full credit	2				
23	a	Mechanical energy to electrical energy	1				
	b	A.C. generator	1				
	c	 luction	1	5	5		
	d	X - Graphite brush, Y - Slip ring	1				
	e		1				
24	a	Electrical energy to heat energy	1			5	5
	b	$I = V/R$ 1/2 score $230/115 = 2 \text{ A}$ correct answer full credit	1	5	5		
	c	$P = I \times V$ $P = 2 \times 230 = 460 \text{ W}$ Equation only 1/2 score	1				
	d	Current, Resistance/ Potential difference, Time , (Equation only 1 score)	2				