


DISA PHYSICS MODEL EXAMINATION 2022

ANSWER KEY - PHYSICS (Tirur Educational District) Set B

Qn No:	Section	Answer point	Score		Total	Section total
1		Heat energy	1	4	7	7
2		Tin and lead	1			
3		11000	1			
4		Convex mirror	1			
5		25 cm	1			
6		Optic centre	1			
7		Fleming's left hand rule	1	3		
8		3	1			
9		Presbyopia	1			
10		i) Increase the Intensity of electric current. ii) Increase the Number of turns of the coil. iii) Increase Area of cross section of the soft iron core. (Any two) 1 score each	2	2	2	4
11		i) High resistivity ii) High melting point iii) High ductility iv) Ability to emit white light in the white hot condition. (Any two) 1 score each	2	2	2	
12		a) 100 W power at 230 V potential difference b) Energy in kilowatt hour = $\frac{\text{Power in watt} \times \text{time in hour}}{1000}$ $\frac{100 \times 5}{1000} = \frac{500}{1000} = 0.5 \text{ unit}$ (Formula not compulsory)	1 1			
13		a) Electrical energy → mechanical energy (sound energy) b) Motor principle c) 'a' - voice coil (or moving coil) 'b' - Field magnet (1/2 score each)	1 1 1	3	9	12
14		a) Electromagnetic induction b) i) Number of turns of the coiled conductor ii) Strength of the magnet iii) Speed of the magnet/solenoid (Any two) 1 score each	1 2	3		
15		a) Refraction b) i) Medical field ii) In the field of telecommunication (Or Any two relevant answer) 1 score each	1 2	3		

16	a) Dispersion b) Violet, violet colour has the shortest wavelength.	1 2	3		
17	a) Increases b) Amperage = Wattage/voltage OR W/V (Any relevant answer) c) 3.5 A	1 1 1	3	3	
18	a) Parallel b) $R = r/n = 4/2 = 2 \Omega$ (Or using any relevant equation) c) 12 V d) $I = V/R = 12/2 = 6 A$	1 1 1 1	4	8	12
19	a) $1/f = 1/u + 1/v$ b) $u = -10 \text{ cm}, v = -15 \text{ cm}$ c) $f = uv/u+v = -10 \times -15 / -10 + (-15) = 150 / -25 = -6 \text{ cm}$ $m = -v/u = -(-15) / -10 = -1.5$	1 1 1 1	4		
20	a) At 2F b) Real, same size as that of the object, inverted (Any two) 1 score each c) Dioptre OR D	1 2 1	4		
21	a) i. Raise the temperature of the body by massaging. ii. Give artificial respiration iii. Massage the muscles and bring them to the original condition. iv. Apply pressure on the chest regularly. v. Take the person to the nearest hospital immediately. (Any two relevant answer) b) Any relevant answer. (Any two points)	2 2	4	4	
22	a) The refractive index of a medium with respect to vacuum is called absolute refractive index. b) Refractive index of glass = speed of light in air/speed of light in glass OR c/v $3 \times 10^8 \text{ m/s} / 3 \times 10^8 \text{ m/s} = 2$ c) Snell's law	1 2 1	4		
23	a) $I = P/V = 800/200 = 4 A$ b) $R = V^2/P = 200 \times 200 / 800 = 50 \Omega$ c) $H = I^2 R t = 4 \times 4 \times 50 \times 10 = 8000 J$ (Using any relevant equation) d) $P = V^2/R = 100 \times 100 / 50 = 200 W$	1 1 2 1	5	5	5

24		<p>a) DC generator</p> <p>b) Mechanical energy → electrical energy</p> <p>c) </p> <p>d) DC generator- Fluctuating emf, Cell/ battery- Non fluctuating emf, In DC generator the amount of emf is not decreasing, In cell the amount of emf may decrease while time increases, or any relevant answer (Two Points)</p>	1	1	5	
			1			
			2			