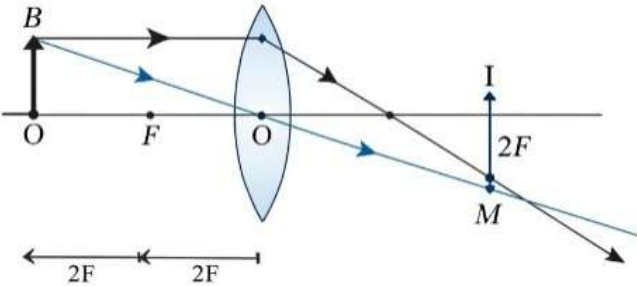


Total Score:40

1

	$H = \frac{V^2}{R} t$ $R = \frac{V^2}{H} t$ $= \frac{200 \times 200 \times 60}{12000}$ $= 200 \Omega$	
11	a) Decreased eyeball length Decreased power of lens b) By using a convex lens with suitable power.	1 1
12	a) Virtual b) Yes 	1 2
13	A a) The colours of light which can create all other coloured light are called primary colours. b) Red, Blue, Green (any two) Red + Blue = Magenta Blue + Green = Cyan Red + Green = Yellow c) Complementary colours: When a secondary colour is combined with a primary colour, we get white light. Such pairs of colours are called complementary colours. Magenta – Green Cyan – Red Yellow – Blue B. a) Leaves – Green Flower – Yellow Secondary colour filters transmit their own colour and its component colours. b) Green light. (Red flower pot Yellow flower and green leaf appear as green in green light)	1 1 1 2 1
14	Methods that can be adopted to reduce carbon footprint: <ul style="list-style-type: none"> ▪ Reduce domestic energy consumption. ▪ Avoid wasting food. ▪ Use public transport. ▪ Reduce waste by using reusable products. ▪ Educate society about reducing carbon footprint. ▪ Perform energy-consuming activities in an energy-saving manner. ▪ Use renewable sources of energy rather than non-renewable sources of energy. (Any 3)	3
15	A	

	<p>a) Work done, $W = F \times S$ $= 400 \times 3$ $= 1200 \text{ J}$</p> <p>b) Work done by the load = Work done by the effort $1200 = E \times 6$ $E = \frac{1200}{6} = 200 \text{ N}$</p> <p style="text-align: center;">OR</p> $\frac{L}{E} = \frac{l}{h}$ $E = L \times \frac{h}{l} = 400 \times \frac{3}{6} = 200 \text{ N}$ <p style="text-align: center;">OR</p> <p>B.</p> <p>a) Height of the screw = 30 cm Length of one thread = 15 cm Number of threads = 10 Pitch of the screw = $\frac{30}{10} = 3 \text{ cm}$</p> <p>b) Mechanical advantage = $\frac{1}{h} = \frac{15}{3} = 5$</p> <p>c) $MA = \frac{L}{E}$ $5 = \frac{10000}{E}$ $E = \frac{10000}{5} = 2000 \text{ N}$</p>	<p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p>
16	<p>a) Graph: (a)</p> <p>b) Graph: (a) In a DC generator, when the coil is fixed (stator), the split ring commutator is not rotates or not used. Hence, the electricity obtained in the external circuit is AC.</p>	<p>1</p> <p>2</p>
17 A	<p>a) Direction of current: A to B</p> <p>b) Methods to reverse the direction of rolling: 1. Change the terminals of the battery (reverse current) 2. Change the polarity of the magnet</p>	<p>1</p> <p>2</p>
18	<p>A</p> <p>a) The wave is a longitudinal wave. Yes, it requires a medium for propagation.</p> <p>b) Wavelength is the distance between two adjacent compressions or rarefactions. $\lambda = 7 \text{ m}$</p> <p>c) $v = f\lambda$ $f = \frac{n}{t} = \frac{3}{2} = 1.5 \text{ Hz}$ $v = 1.5 \times 7 = 10.5 \text{ m/s}$</p> <p>B</p> <p>a) Wave B has lower amplitude.</p> <p>b) $f = \frac{n}{t}$, $t = 12 \text{ s}$ Wave A: $f = \frac{3}{12} = 0.25 \text{ Hz}$</p>	<p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p>

	<p>Wave B: $f = \frac{4}{12} = 0.33 \text{ Hz}$</p> <p>c) $\text{Speed} = \frac{\text{Distance}}{\text{Time}}$</p> <p>Wave A: $v = \frac{12}{12} = 1 \text{ m/s}$</p> <p>Wave B: $v = \frac{24}{12} = 2 \text{ m/s}$</p>	2
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