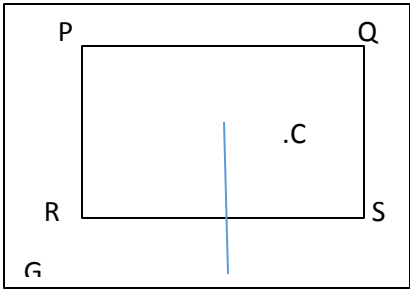
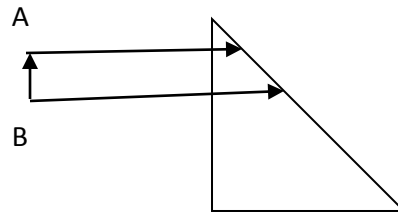


RAY OPTICS & OPTICAL INSTRUMENTS

Test Paper-I

MAX MARKS: 30
TIME: 90Mts

Sl. No.	QUESTION	ANSWER PAGE	MARKS
1	Which spectrum of EMR defines light? Give any two properties of light.	Page 309	1+2
2	Define normal to the spherical surface. Also derive the expression for finding the relation between the focal length and radius of curvature of the mirror.	Page 312	1+2
3	Derive Mirror formula for a concave mirror	Page 313.	1+2
4	Suppose that the lower half of the concave mirror's reflecting surface is covered with an opaque material. What effect will this have on the image of an object placed in front of the mirror?	Page 315	2
5	An object is placed at (i) 10cm, (ii) 5 cm in front of a concave mirror of radius of curvature 15 cm. Find the position, nature, and magnification of the image in each case.	Page:315	11/2 +11/2
6	A mobile phone lies along the principal axis of a concave mirror. Show with the help of a suitable diagram, the formation of its image. Explain why magnification is not uniform.	Page:315	1+2
7	How is the focal length of a spherical mirror affected when the wavelength of the light used is increased? (Hint: working of mirror depends on the property of reflection.)		2
8	Define optical density. Give the physical significance of it.	Page317	2
9	Define refraction of light. Give the laws of refraction.	Page 317	2
10	Give the formula to find the apparent depth of the bottom of a tank filled with water. Also explain why the sun is visible a little before the actual sunrise and until a little after the actual sunset.	Page318	1+2
11	Consider a rectangular swimming pool PQRS. A lifeguard sitting at G outside the pool notices a child drowning at a point C. Then find the shortest time taken by the guard to reach the child.		3
			
		Page319	
13	Trace the path of the light ray in the following ray diagram	Page:322	



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