Q.1 The dispersive power of prism depends upon(A)The material of the prism(C)The angle of the prism

(**B**)The shape of the prism (**D**)Height of the prism

- Q.2 Why do we study the Dispersion phenomenon using a glass prism and not a glass slab ?
 (A)Light does not undergo any deviation inside a glass slab; so cannot be used to study dispersion.
 (B)In glass slab all of dispersion that takes place at the first interface is exactly reversed at the second parallel surface; undoing the effect of the first interface.
 (C)We can use glass slab to study dispersion.
 (D)None of the above.
- Q.3 In dispersion without deviation :
 (A) The emergent rays of all the colors are parallel to the incident ray
 (B) Yellow colored ray is parallel to the incident ray
 (C) Only red colored ray is parallel to the incident ray
 (D) All the rays are parallel, but are not parallel to the incident ray
- **Q.4** The refracting angles of the flint and crown glass prisms are A' and A and their refractive indices are μ' and μ respectively. They are to be used for dispersion without deviation. The ratio of their refracting angles $\frac{A'}{A}$ will be :

$$(\mathbf{A})_{\overline{A}}^{\underline{A'}} = \begin{pmatrix} 1+\mu \\ \mu'-1 \end{pmatrix} \qquad (\mathbf{B})_{\overline{A}}^{\underline{A'}} = \begin{pmatrix} 1-\mu \\ \mu'-1 \end{pmatrix} \qquad (\mathbf{C})_{\overline{A}}^{\underline{A'}} = \begin{pmatrix} 1-\mu \\ \mu'+1 \end{pmatrix} \qquad (\mathbf{D})_{\overline{A}}^{\underline{A'}} = \begin{pmatrix} 1-\mu \\ 1-\mu' \end{pmatrix}$$

- Q.5If the refractive index of the crown glass for red, yellow and violet colors are 1.514, 1.517 and 1.531
respectively then, the dispersive power of the crown glass will be :
(A)0.022(B)0.045(C)0.011(D)0.033
- **Q.6** When a ray of white light passes through a hollow prism as shown in the figure, then :



(A) There is no dispersion and no angular deviation.
(B) Dispersion but no angular deviation.
(C) Angular deviation but no dispersion.
(D) There is dispersion and angular deviation both.

- Q.7 Two beams of red and violet colors are made to pass separately through a prism (angle of prism is 60°). In the position of minimum deviation, the angle of refraction will be :
 (A)30° for both the colors
 (B)Greater for the violet color
 (C)Greater for the red color
 (D)Equal but not equal to 30° for both the colors
- Q.8In the formation of rainbow, light from the sun in the water droplets undergoes :
(A)Dispersion only
(C)Both dispersion and total internal reflection.(B)Total internal reflection only
(D)None of the above
- Q.9A thin prism with angle of prism $A = 10^{\circ}$ has refractive index of 1.627 for red light and 1.648 for
violet light. The angular dispersion produced by the prism will be :
(A)0.21°(B)0.021°(C)0.0021°(D)0.37°

Q.10Flint glass prism is joined by a crown glass prism to produce dispersion without deviation. The
refractive indices of these prisms for yellow ray are 1.602 and 1.500 respectively. If the angle of flint
glass prism is 10°. Then the angle of crown glass prism will be :

(A)12.04°(B)11.50°(C)13.25°(D)20°

ANSWER KEY

Q.	1	2	3	4	5	6	7	8	9	10
Sol.	(A)	(B)	(B)	(B)	(D)	(A)	(A)	(C)	(A)	(A)