Q.1 You are given two converging lenses of focal lengths 1.25 cm and 5 cm to design a compound microscope. If it is desired to have a magnification of 30, find out the separation between the object and the eyepiece.
(A)7.5 CM **(B)**10 CM **(C)**5 CM **(D)**12.5 CM

Q.2 In a compound microscope the focal length of an objective lens is 1.2 cm and the focal length of the eye piece is 3 cm. When the object is kept at 1.25 cm in front of the objective lens, the final image is formed at infinity. Magnifying power of the compound microscope should be:
(A)400 **(B)**200 **(C)**150 **(D)**100

Q.3 Focal length of objective lens and eyepiece of an astronomical telescope are 100 cm and 2 cm respectively. Find the angular magnification produced in the case of normal adjustment:
(A)100 **(B)**50 **(C)**200 **(D)**25

Q.4 Find the magnifying power of a telescope, when the final image is formed at least distance of distinct vision. Focal length of used lenses is12.5 cm and 100 cm.
(A)10 **(B)**12 **(C)**18 **(D)**22

Q.5 The maximum angular magnification produced by an astronomical telescope is 30. Find the focal length of objective lens, if the focal length of eyepiece is 12.5 cm.
(A)25 cm **(B)**50 cm **(C)**125 cm **(D)**250 cm

Q.6 Assertion: If objective and eyepiece of a microscope are interchanged, then it can work as a telescope.
Reason: The objective lens of the telescope has small focal length.
(A) Both the Assertion and reason are true and Reason is correct explanation of Assertion.
(B) Both the Assertion and Reason are true and Reason is not correct explanation of Assertion.
(C) Assertion is true, but Reason is false.
(D) Both the Assertion and Reason are false.

Q.7 A telescope is used to view the moon. What is the angle subtended by the moon on telescope if focal length of objective lens is 12 cm and the size of the image of the moon is 2 cm?
(A)2.77° **(B)**3.77° **(C)**4.77° **(D)**5.77°

Q.8 Magnification of a compound microscope is 30. Focal length of eyepiece is 5 cm and the final image is formed at the least distance of distinct vision. Find the magnification of an objective lens.
(A)5 **(B)**7 **(C)**9 **(D)**3

Q.9 The magnifying power of the objective lens of a compound microscope is 7. If the magnifying power of the compound microscope is 35, then the magnifying power of the eyepiece will be -
(A)4 **(B)**5 **(C)**6 **(D)**7

Q.10 In a compound microscope, the image formed by the objective lens is -
(A) Virtual, erect and magnified **(B)**Real, inverted and diminished
(C) Real, inverted and magnified **(D)**Virtual, erect and diminished

ANSWER KEY

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