NATIONAL MODEL SENIOR SECONDARY SCHOOL
PEELAMEDU – COIMBATORE

KNOWLEDGE IS SUPREME

CLASS: XII PHYSICS

CHAPTER 9: RAY OPTICS

MCQ ASSESSMENT

1. The refractive index of air with respect to glass is 2/3.The refractive index of diamond with respect to air is 12/5.Then the refractive index of glass with respect to diamond will be:

a. 5/8 b. 8/9 c. 5/18 d. 18/5

2. A microscope is focused on a mark on a piece of paper and then a slab of glass of thickness 3cm and a refractive index of 1.5 is placed over the mark. How should the microscope be moved to get the mark in focus again?

a. 2cm upward b. 1 cm upward

c. 4.5 cm downward d. 1 cm downward

3. A ray of light having wavelength 720 nm enters in a glass of refractive index 1.5. The wavelength of the ray within the glass will be

a. 360 nm b. 480 nm c. 720 nm d. 1080 nm

4. An object s immersed in a fluid. In order that the object becomes invisible, it should

a. behave as a perfect reflector b. absorb all light falling on it

c. have refractive index one d. have refractive index same as fluid

5. Brilliance of a diamond is due to

a. shape b. cutting

c. reflection d. total internal reflection

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6. A wire mesh consisting of very small squares is viewed at a distance of 8 cm through a magnifying converging lens of focal length 10 cm, kept close to the eye. The magnification produced by the lens is

a. 5 b. 8 c. 10 d. 20

7. A lens is made of flint glass (refractive index = 1.5). When the lens is immersed in a liquid of refractive index 1.25, the focal length:

a. increases by a factor of 1.25 b. increases by a factor of 2.5

c. increases by a factor of 1.2 d. increases by a factor of 1.2

8. A thin convex lens of refractive index 1.5 has 20cm focal length in air. If the lens is completely immersed in a liquid refractive index 1.6, its focal length will be

a. -160 cm b. -100 cm c. +10 cm d. 100 cm

9. A convex lens of refractive index 3/2 has a power of 2.5 D in air. If it is placed in a liquid of refractive index 2, then the new power of the lens is

a. -1.25 D b. -1.5 D c. 1.25 D d. 1.5 D

10. Two thin lenses of focal; lengths f1 and f2 are in contact and coaxial. The total focal length of the combination is

a. f1+f2 b. f1*f2 c. f1+f2 / f1f2 d. f1f2/f1+f2

11. Two lenses of power +12D and -2D are combined together. What is their equivalent focal length?

a. 10 cm b. 12.5 cm c. 16.6 cm d. 8.33 cm

12. A doctor advises a patient to use spectacles with a convex lens of focal length 40 cm in contact with a concave lens of focal length 25 cm. What is the power of the resultant combination?

a. 1.5D b. -1.5D c. 6.5D d. -6.5D

13. A person using a lens as a simple microscope sees an

a. inverted virtual image b. inverted real magnified image

c. upright virtual image d. upright real magnified image

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14. The astronomical telescope consists of objective and eye piece. The focal length of the objective is

a. equal to that of eyepiece b. greater than that of the eye piece

c. shorter than that of the eyepiece d. five times shorter than that of eyepiece

15. The focal length of the objective and eye lenses of a microscope are 1.6 cm and 2.5 cm respectively. The distance between the two lenses is 21.7 cm. If the final image is formed at infinity, what is the linear magnification?

a. 11 b. 110 c. 1.1 d. 44

16. The angle of a prism is 6 degree and its refractive index for green light is 1.5. If a green ray passes through it, the deviation will be _____ in degrees

a. 30 b. 15 c. 3 d. 0

17. Sky appears to be blue in clear atmosphere due to light's

a. diffraction b. dispersion c. scattering d. polarization

18. The colour which has maximum deviation is

a. red b. violet c. blue d. green

19. Which of the following is due to total internal reflection?

a. Looming b. endoscope

c. Mirage d. all the above

20. Advantages of reflecting type telescope

a. no spherical aberration b. no chromatic aberration

c. short tube length d. all the above

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