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OLYMPIAD PRACTICE WORKSHEET -2

**1) The speed of light is \_\_\_\_\_ in vacuum.**

- a)  $3 \times 10^5$  m/s
- b)  $3 \times 10^8$  m/s
- c)  $3 \times 10^8$  km/s
- d)  $3 \times 10^6$  m/s

**2) The wavelength of the visible light is \_\_\_\_\_.**

- a)  $4 \times 10^{(-7)}$  to  $8 \times 10^{(-7)}$  m
- b)  $4 \times 10^7$  to  $8 \times 10^7$  m
- c)  $4 \times 10^{(-7)}$  to  $8 \times 10^{(-7)}$  Å
- d)  $4 \times 10^7$  to  $8 \times 10^7$  Å

**3) We can see objects because of \_\_\_\_\_**

- a) Reflection
- b) Refraction
- c) Transmission
- d) Diffraction

**4) The image formed by a convex mirror is always \_\_\_\_\_**

- a) Real
- b) Enlarged
- c) Virtual and enlarged
- d) Diminished

**5) As you move an object away from a convex mirror, its image becomes \_\_\_\_\_ and moves towards \_\_\_\_\_**

- a) Smaller, infinity
- b) Smaller, focus
- c) Enlarged, infinity
- d) Enlarged, focus

**6) For a spherical mirror, \_\_\_\_\_ is true.**

- a)  $f = 2R$
- b)  $R = 2f$
- c)  $fR = 2$
- d)  $fR = 1/2$

**7) The image formed by a concave lens is \_\_\_\_\_.**

- a) Always real and enlarged
- b) Always real and diminished
- c) Always virtual and enlarged
- d) Always virtual and diminished

**8) Which of the following is a true statement?**

- a) The power of a lens is always positive.
- b) The power of a lens is always negative.
- c) The power of a convex lens is positive.
- d) The power of a concave lens is positive.

**9) Image formed by a concave mirror is erect and enlarged. What is the position of the object?**

- a) Between focus F and the centre of curvature
- b) At the centre of curvature
- c) Beyond the centre of curvature
- d) Between pole and the focus

**10) If the focal length of a spherical mirror is 40 cm, then its radius of curvature is \_\_\_\_\_ cm.**

- a) 80
- b) 20
- c) 10
- d) 5

**11) The velocity of light in vacuum is \_\_\_\_\_ m/s**

- a)  $3 \times 10^6$
- b)  $3 \times 10^8$
- c)  $3 \times 10^{12}$
- d)  $3 \times 10^{15}$

**12) If the angle of incidence,  $\theta_i = 0^\circ$ , the angle of reflection,  $\theta_r =$  \_\_\_\_\_.**

- a)  $0^\circ$
- b)  $90^\circ$
- c)  $180^\circ$
- d)  $45^\circ$

**13) No matter how far is the object from the mirror, the image of the object appears erect. The mirror is \_\_\_\_\_.**

- a) Concave
- b) convex
- c) Either concave or convex
- d) None of these

**14) A boy is standing at a distance of 2 m in front of a plane mirror. The distance between the boy and his image is \_\_\_\_\_ m.**

- a) 4
- b) 3
- c) 2
- d) 1

**15) The image formed by a concave mirror is real, inverted and of the same size as that of the object. The position of the object should be \_\_\_\_\_.**

- a) Beyond the centre of curvature of mirror
- b) Between the centre of curvature and the focus
- c) At the centre of curvature of the mirror
- d) At the focus

**16) Which of the following has the highest refractive index?**

- a) Glass
- b) Water
- c) Pearl
- d) Diamond

**17) The image formed by a plane mirror is \_\_\_\_\_.**

- a) real
- b) diminished
- c) enlarged
- d) laterally inverted

**18) The incident ray passing through the focus(F) of a mirror \_\_\_\_\_ after reflection.**

- a) passes through C
- b) passes through F
- c) becomes parallel to the principal axis
- d) passes through the pole

**19) The incident ray passing through the center of curvature(C) of a mirror \_\_\_\_\_ after reflection.**

- a) passes through C
- b) passes through F
- c) passes through the pole
- d) becomes parallel to the principal axis

**20) The incident ray parallel to the principal axis of a mirror \_\_\_\_\_ after reflection.**

- a) passes through C
- b) passes through F
- c) passes through the pole
- d) reverts back in the opposite direction