

LIGHT, HEAT, THERMODYNAMICS, WAVE MOTION, SOUND, OPTICS & OSCILLATIONS BASED GENERAL SCIENCE MCQ PRACTICE QUESTIONS AND ANSWERS PDF WITH EXPLANATION

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Created By [Careericons](#) Team

Q1. Transfer of heat by convection can take place in

- a) Solids and vacuum
 - b) Gases and liquids
 - c) Solids and liquids
 - d) Vacuum and gases
-

Q2. Consider the following statements:

- The values of u and f for a concave lens are always negative by convention.
- The power of a convex lens is negative and that of a concave lens is positive.
- A concave lens always forms a virtual, erect and smaller image.

Which of these statements are correct?

- a) 2 and 3
 - b) 1 and 2
 - c) 1 and 3
 - d) 1, 2 and 3
-

Q3. Ventilators are provided at the top of room

- a) to maintain conventional currents to keep the air fresh in the room
 - b) to bring oxygen for breathing
 - c) so that sunlight may enter the room
 - d) to provide an outlet for carbon dioxide
-

Q4. A solid is melted (above the melting point) and allowed to cool down at normal condition. Its variation of temperature as a function of times is as shown in the figure given below. What is the reason for the plateau (flat position) in the central region of the cooling curve as shown in the figure?

- a) Specific heat of the solid
- b) Latent heat of fusion of the solid
- c) Thermal conductivity of the solid
- d) Thermal capacity of the solid.

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Q5. A watch shows times as 3 : 25 when seen through a mirror, time appeared will be

- a) 7 : 35
- b) 8 : 35
- c) 9 : 35
- d) 8 : 25

Q6. Bats can fly during dark nights and also prey. This is because

- a) Their night vision is very good
- b) Every bird can do this
- c) The pupil of their eyes is large
- d) They produce ultrasonic waves and are guided by them

Q7. The radius of curvatures of the plane mirror is

- a) Infinity
- b) One

- c) Zero
 - d) Between one and infinity
-

Q8. A noise level of 100 decibel would correspond to

- a) Ordinary conversation
 - b) Sound from a noisy street
 - c) Just audible sound
 - d) Noise from a machine shop
-

Q9. Total internal reflection can take place only if

- a) the refractive indices of the two media are close to different
 - b) light goes from optically rarer medium (smaller refractive index) to optically denser medium
 - c) light goes from optically denser medium to rarer medium
 - d) the refractive indices of the two media are widely different
-

Q10. Consider the following statements:

- Steam at 100°C and boiling water at 100°C contain the same amount of heat.
- The latent heat of fusion of ice is equal to the latent heat of vaporization of water.
- In an air-conditioner, heat is extracted from the room air at the evaporator coils and is rejected out at the condenser coils.

Which of these statement(s) given above is/are **correct**?

- a) 2 only
 - b) 2 and 3
 - c) 1 and 2
 - d) 3 only
-

Q11. Consider the following statements:

- Water kept in an open vessel will quickly evaporate on the surface of the moon.
- The temperature at the surface of the moon is much higher than boiling point of the water.

- Two bodies at different temperatures, if brought in contact do not necessary settle to the mean temperature.
- The two bodies may have different thermal capacities.

Which of the statements are correct?

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

Q12. Consider the following statements:

- If a person looks at a coin which is in a bucket of water, the coin will appear to be closer than it really is.
- If a person under water looks at a coin above the water surface, the coin will appear to be at a higher level than it really is.

Which of the above statement(s) is/are correct?

- a) 2 only
- b) 1 and 2
- c) 1 only
- d) None

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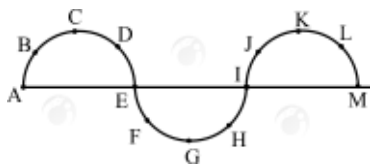
Q13. Echo is a type of

- a) neither reflected sound nor refracted sound
 - b) reflected sound
 - c) refracted sound
 - d) None of these
-

Q14. The time taken to reach the Sunlight up to the surface of Earth is approximately

- a) 8.5 minutes
- b) 4.8 sec
- c) 4.2 sec
- d) 3.6 hours

Q15. Figure given above shows the part of a long string in which transverse waves are produced. Which pair of points is in phase?



- a) B and J
- b) A and E
- c) D and J
- d) C and G

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Answers to the above questions :

Q1. Answer: (b)

Q2. Answer: (c)

Power of lens is defined as $P = 1/f$

where f = focal length of the lens.

For, convex lens $f = (+)$ ve concave lens $f = (-)$ ve

Q3. Answer: (a)

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Q4. Answer: (b)

Q5. Answer: (b)

Subtract the given time from 11: 60.

Q6. Answer: (d)

Q7. Answer: (a)

Q8. Answer: (d)

Q9. Answer: (c)

According to Snell's Law

$$\frac{\sin i}{\sin r} = \frac{\mu_2}{\mu_1}$$

where $r = 90^\circ$ for a particular incidence angle called the critical angle. When the incidence angle is equal to or greater than i_c , then total internal reflection occurs.

It takes place when the ray of light travels from an optically denser medium ($\mu_1 > \mu_2$) to an optically rarer medium.

Q10. Answer: (d)

Only statement 3 is correct.

An air conditioner (often referred to as AC) is a home appliance, system, or mechanism designed to dehumidify and extract heat from an area.

Steam (at 100 degrees Celsius) has more energy than water (at 100 degrees Celsius) because it takes energy to break the bonds that keep it liquid.

Latent heat is the heat released or absorbed by a chemical substance or a thermodynamic system during a change of state that occurs without a change in temperature.

The latent heat of fusion of water is 334 kJ/kg whereas the Latent heat of vaporization of water is 2260 kJ/kg.

Q11. Answer: (d)

Heat is transferred between two or more systems or a system and its surrounding by virtue of temperature difference.

Q12. Answer: (b)

Refraction is the change in direction of a wave due to a change in its speed. This is most commonly observed when a wave passes from one medium to another at any angle other than 90° or 0° .

The refraction of light is the most commonly observed phenomenon.

In both cases, the phenomenon of refraction is applicable because there will be a change in the direction and speed as light enters from one media to other. In case 1 light for an observer outside water the light ray is travelling from a denser medium (water) to a rarer medium (air).

Thus, the image of the coin will appear closer due to refraction. Whereas in case 2 for the observer underwater refraction also takes place but in the opposite way as light travels from a

rarer medium (air) to a denser medium (water) .

Thus, the image of the coin will appear at a higher level than the actual position of the coin.

Q13. Answer: (b)

Q14. Answer: (a)

Q15. Answer: (d)

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