



Junior Physics Olympiad (JPO)

Sample Question Paper – Class VII

1. Two students walk from the school gate to the classroom using different paths. Both reach the classroom.

Which quantity must be the same for both students?

- A) Distance travelled
- B) Speed
- C) Displacement
- D) Time taken

2. A cyclist covers 40 m in the first 5 s and 40 m in the next 5 s.

The cyclist is certainly moving with

- A) Uniform speed
- B) Increasing speed
- C) Decreasing speed
- D) Zero acceleration

3. Which of the following is a vector quantity?

- A) Distance
- B) Speed
- C) Time
- D) Force

4. A boy walks 5 m east and then 5 m west.

His

- A) distance = 0, displacement = 10 m
- B) distance = 10 m, displacement = 0
- C) distance = 5 m, displacement = 5 m
- D) distance = 10 m, displacement = 10 m

5. Two equal forces act on a box as shown.

- One towards east
- One towards west

The box

- A) must move east
- B) must move west
- C) experiences zero resultant force
- D) has zero force acting on it

6. A passenger standing inside a moving bus suddenly falls backward when the bus starts moving quickly.

This is due to

- A) gravity
- B) inertia
- C) friction
- D) pressure

7. Which statement correctly explains Newton's First Law?

- A) A moving object always speeds up.
- B) Every moving object eventually stops even without external forces.
- C) An object maintains its state unless acted upon by an unbalanced force.
- D) Heavier objects always move slower.

8. A football is kicked. Which pair correctly represents the action-reaction forces?

- A) Foot on ball and ball on foot
- B) Foot on ground and ball on air
- C) Ball on ground and Earth on Sun
- D) Ball on goalpost and grass on shoe

9. A force of 20 N acts to the right while another force of 15 N acts to the left.

The resultant force is

- A) 35 N right
- B) 5 N left
- C) 5 N right
- D) 20 N left

10. Which surface exerts the greatest pressure?

- A) A person standing on both feet
- B) A person standing on one foot
- C) A person lying on the floor
- D) A person sitting on a chair

11. Why do sharp knives cut more easily?

- A) They have greater weight.
- B) They produce greater pressure.
- C) They reduce friction.
- D) They increase force automatically.

12. Atmospheric pressure is mainly caused by

- A) sunlight
- B) Earth's magnetic field
- C) the weight of air above us
- D) Earth's rotation

13. Hot tea cools mainly because heat flows

- A) from cooler surroundings to hotter tea
- B) from hotter tea to cooler surroundings
- C) equally in both directions
- D) only upward

14. A metal spoon and a wooden spoon are kept in hot soup.

After a few minutes, the metal spoon feels hotter because

- A) it produces heat
- B) it is a better conductor
- C) it absorbs sunlight
- D) it has less mass

15. A kaleidoscope works because of

- A) refraction
- B) multiple reflection
- C) dispersion
- D) shadow formation

16. In a periscope, the mirrors are usually placed at

- A) 0°
- B) 30°
- C) 45°
- D) 90°

17. An electromagnet differs from a permanent magnet because it

- A) works only when electric current flows
- B) attracts only iron
- C) has only one pole
- D) cannot produce magnetic fields

18. A compass is placed near a current-carrying wire.

The compass needle deflects because

- A) electric current produces a magnetic field
- B) current produces gravity
- C) electricity removes Earth's magnetic field
- D) the wire becomes permanently magnetic

19. Which observation best shows scientific thinking?

- A) Repeating an experiment and comparing results
- B) Accepting the first answer without checking
- C) Guessing based on appearance
- D) Ignoring measurements

20. A student says,

"If the resultant force on an object is zero, the object cannot move."

This statement is

- A) Always true
- B) True only for light objects
- C) False, because an object can move with constant speed
- D) True only in space