GG RS LEARNING HUB PVT. LTD.

NSO Class 07

Total Questions: 35 Time: 60 min

Physics

1. A car travels from point P to Q at a speed of 40 km/h and returns from Q to P at a speed of 60 km/h. What is the average speed of the car for the entire journey?

(A) 50 km/h (B) 48 km/h

(C) 0 km/h (D) 52 km/h

2. Three identical metal rods P, Q, and R are coated with a thin layer of wax. Hot water is poured over one end of each rod simultaneously. The wax melts up to lengths of 2 cm on P, 3.5 cm on Q, and 1.5 cm on R in the same amount of time. Which of the following correctly arranges the rods in descending order of their thermal conductivity?

(A) P > Q > R (B) Q > P > R

(C) R > P > Q (D) Q > R > P

3. The distance-time graph shows the motion of two cars, A and B. Which statement is incorrect based on the graph?

(A) Car A is moving faster than car B.

(B) Both cars have a non-uniform speed.

(C) Car B starts moving after car A.

(D) Both cars are moving in the same direction.

4. A simple pendulum takes 40 seconds to complete 20 oscillations. If the length of the pendulum is quadrupled, what will be the new time period for one oscillation?

(A) 2 s (B) 4 s

(C) 1 s (D) 8 s

5. A steel ball at 50∘C is dropped into a beaker containing water at 50∘C. Which of the following will happen?

(A) Heat will flow from the steel ball to the water.

(B) Heat will flow from the water to the steel ball.

(C) Heat will flow in both directions equally.

(D) There will be no net flow of heat.

6. An electrician connects three identical bulbs (B1, B2, B3) and two identical cells (C1, C2) in a circuit as shown. If the filament of bulb B2 breaks, what will happen?

(A) Only B1 will glow.

(B) B1 and B3 will glow, but B1 will be dimmer than before.

(C) B1 and B3 will glow, and B1 will be brighter than before.

(D) None of the bulbs will glow.

7. A concave mirror produces a real, inverted image that is three times the size of the object. If the object is placed 20 cm from the pole of the mirror, where is the image formed?

(A) 60 cm in front of the mirror

(B) 60 cm behind the mirror

(C) 6.67 cm in front of the mirror

(D) 30 cm in front of the mirror

8. Why does a gentle breeze in a coastal area often reverse its direction from day to night?

(A) The specific heat capacity of land is higher than that of water.

(B) The land heats up and cools down faster than the sea.

(C) The moon's gravitational pull changes the wind direction.

(D) The Earth's rotation causes the Coriolis effect.

NSO Class 07

Total Questions: 35 Time: 60 min

9. An electromagnet is created by wrapping a wire around an iron nail. Which action would NOT increase the strength of this electromagnet?

(A) Increasing the number of turns in the coil.

(B) Increasing the current flowing through the wire.

(C) Replacing the iron nail with a copper rod.

(D) Using a stronger battery.

10. A convex lens of focal length 15 cm forms an image. If the image formed is real, inverted, and of the same size as the object, at what distance is the object placed from the lens?

(A) 15 cm (B) 20 cm

(C) 30 cm (D) 45 cm

11. A fuse wire is characterized by its:

(A) High melting point and high resistance.

(B) High melting point and low resistance.

(C) Low melting point and high resistance.

(D) Low melting point and low resistance.

12. A white shirt and a black shirt are left in the sun for an hour. After one hour, the temperature of the black shirt is 45∘C and the white shirt is 38∘C. If both are then brought into a cool room, which shirt will cool down faster, and why?

(A) The white shirt, because it's a poor absorber of heat.

(B) The black shirt, because good absorbers are also good emitters of heat.

(C) Both will cool down at the same rate.

(D) The white shirt, because it reflects heat better.

Chemistry

13. Substance X is bitter and soapy to the touch. Substance Y turns blue litmus red. When X and Y are mixed, a new substance Z is formed along with the evolution of heat. What are X, Y, and Z likely to be?

(A) X: Acid, Y: Base, Z: Salt

(B) X: Base, Y: Acid, Z: Salt

(C) X: Salt, Y: Acid, Z: Base

(D) X: Base, Y: Salt, Z: Acid

14. Rina takes a magnesium ribbon (P), burns it in the air to get a white powder (Q). She dissolves Q in water to get a solution (R). What is the effect of solution R on red and blue litmus papers?

(A) No change on red litmus, blue litmus turns red.

(B) Red litmus turns blue, no change on blue litmus.

(C) Red litmus turns blue, blue litmus turns red.

(D) No change on either litmus paper.

15. Which of the following represents only physical changes?

(A) Rusting of iron and melting of wax.

(B) Dissolving salt in water and burning a candle.

(C) Tearing paper and freezing water.

(D) Curdling of milk and cutting a log of wood.

16. A farmer's soil is too acidic. He wants to neutralize it. He has four substances available: lemon juice, baking soda solution, vinegar, and common salt solution. Which two substances are suitable for treating the soil?

(A) Lemon juice and vinegar.

(B) Only baking soda solution.

(C) Baking soda solution and common salt solution.

(D) Only vinegar.

NSO Class 07

Total Questions: 35 Time: 60 min

17. Galvanization is a process of coating iron with a layer of a more reactive metal to prevent rusting. Which metal is commonly used for this, and why does it work even if the coating is scratched?

(A) Tin, because it's non-reactive.

(B) Zinc, because it forms a protective layer of zinc oxide and acts as a sacrificial metal.

(C) Copper, because it's a good conductor.

(D) Aluminium, because it's lightweight.

18. When a solution of baking soda is added to a solution of acetic acid (vinegar), a gas evolves. Which of the following statements about this gas is false?

(A) It turns lime water milky.

(B) It extinguishes a burning splinter.

(C) It is carbon dioxide.

(D) It has a pungent, choking smell.

19. Wool is obtained from the fleece of sheep. The process involves several steps. What is the correct sequence of these steps?

(A) Shearing → Scouring → Sorting → Dyeing → Rolling

(B) Scouring → Shearing → Sorting → Rolling → Dyeing

(C) Shearing → Sorting → Scouring → Dyeing → Rolling

(D) Sorting → Scouring → Shearing → Rolling → Dyeing

20. When a dirty copper vessel is cleaned with a piece of lemon, it regains its shine. This is because:

(A) The lemon juice physically scrubs off the dirt.

(B) The copper carbonate/oxide layer on the vessel is basic and is neutralized by the citric acid in the lemon.

(C) The lemon juice acts as a bleaching agent.

(D) The vitamin C in the lemon polishes the copper.

21. You are given three unknown solutions in test tubes P, Q, and R. Solution P turns phenolphthalein pink. Solution Q does not change the color of phenolphthalein but turns blue litmus red. Solution R shows no color change with any indicator. P, Q, and R are most likely:

(A) P: NaOH, Q: HCl, R: Distilled Water

(B) P: HCl, Q: NaOH, R: Distilled Water

(C) P: Distilled Water, Q: NaOH, R: HCl

(D) P: NaOH, Q: Distilled Water, R: HCl

22. Stainless steel is an alloy. It does not rust easily because:

(A) It is not a pure metal.

(B) It is coated with a layer of oil.

(C) It contains metals like chromium and nickel which form a passive, non-reactive layer on the surface.

(D) It is very hard and cannot be scratched.

23. Which of the following processes involves a chemical change and is also desirable?

(A) Ripening of fruits.

(B) Souring of milk.

(C) Rusting of a ship.

(D) An earthquake.

Biology

NSO Class 07

Total Questions: 35 Time: 60 min

24. In the human digestive system, the enzymes pepsin and trypsin are secreted respectively by the:

(A) Stomach and pancreas

(B) Salivary gland and stomach

(C) Liver and pancreas

(D) Pancreas and stomach

25. The diagram shows a simplified food web. If a disease drastically reduces the population of snakes, what would be the most likely immediate effect?

(A) The population of frogs would increase, and the population of rabbits would decrease.

(B) The population of grasshoppers and eagles would both decrease.

(C) The population of frogs and rabbits would both increase.

(D) The population of grass would decrease.

26. Which of the following adaptations helps a polar bear survive in the Arctic but would be a disadvantage in a tropical desert?

(A) A thick layer of fat under the skin.

(B) A strong sense of smell.

(C) Sharp claws and teeth.

(D) A streamlined body.

27. A blood vessel 'X' has thick, elastic walls and carries blood away from the heart. Another blood vessel 'Y' has thin walls with valves and carries blood towards the heart. What type of blood is typically found in 'X' leaving the right ventricle and 'Y' coming from the lungs?

(A) X: Oxygenated, Y: Deoxygenated

(B) X: Deoxygenated, Y: Oxygenated

(C) X: Deoxygenated, Y: Deoxygenated

(D) X: Oxygenated, Y: Oxygenated

28. When we are exercising heavily, our muscle cells respire anaerobically. This process results in the formation of:

(A) Carbon dioxide, water, and a large amount of energy.

(B) Lactic acid and a small amount of energy.

(C) Alcohol, carbon dioxide, and a small amount of energy.

(D) Lactic acid, water, and a large amount of energy.

29. The opening and closing of stomata in plants are primarily controlled by the:

(A) Amount of chlorophyll in guard cells.

(B) Intensity of sunlight.

(C) Turgor pressure in the guard cells.

(D) Concentration of carbon dioxide in the air.

30. In which part of the alimentary canal is fat completely digested?

(A) Stomach, through the action of pepsin.

(B) Large intestine, through bacterial action.

(C) Mouth, through salivary amylase.

(D) Small intestine, through the action of lipase after emulsification by bile.

31. In vegetative propagation through a stem cutting (e.g., in a rose plant), the new plant is genetically:

(A) Different from the parent plant.

(B) A hybrid of the parent and another plant.

(C) Identical to the parent plant.

(D) Weaker than the parent plant.

32. The process of transpiration is essential for plants because it helps in:

(A) Creating a suction pull for water absorption and cooling the plant.

(B) Absorbing carbon dioxide from the atmosphere.

(C) Generating energy through the breakdown of glucose.

(D) Storing food in the form of starch.

33. Which of the following shows the correct path of urine in the human body?

(A) Kidney → Ureter → Urethra → Urinary bladder

(B) Kidney → Urinary bladder → Urethra → Ureter

(C) Kidney → Ureter → Urinary bladder → Urethra

(D) Kidney → Urethra → Ureter → Urinary bladder

34. A particular soil type is characterized by small particles, high water-holding capacity, and poor aeration. It is very sticky when wet. This soil is most suitable for growing which of the following crops?

(A) Sandy loam for cotton.

(B) Loamy soil for wheat.

(C) Clayey soil for paddy (rice).

(D) Sandy soil for cactus.

35. The weather report for a city says "High humidity and temperature of 35∘C". What does this indicate?

(A) The air contains a large amount of water vapor, and you are likely to feel very sweaty and uncomfortable.

(B) It is likely to rain heavily.

(C) The air is very dry, and evaporation will be very fast.

(D) A cyclone is approaching the city.