

MINDATHON SCIENCE OLYMPIAD (MSO)

CLASS- VIII

TEST PAPER

Time: 1 hour

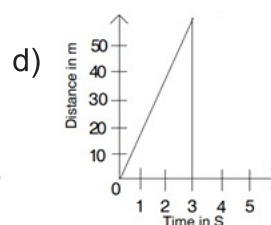
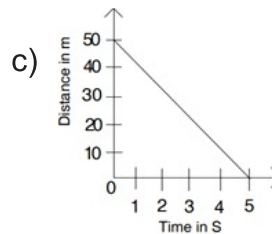
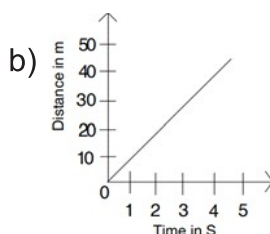
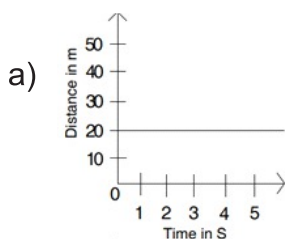
Max Marks: 50

General Instructions:

- There are a total of 45 questions in this test.
- Read each question carefully and answer all of them.
- All the answers must be correctly marked in the OMR sheet provided to you.
- Questions (1–30 & 36–45) carry one mark each. Questions in the 'Mindathon Little Scientists' (31-35) carry 2 marks each.

SECTION A: GENERAL SCIENCE AND SCIENTIFIC AWARENESS

1. From which of the following organs, can urea reach the bloodstream?
a) Lungs b) Kidneys c) Large intestine d) Pancreas
2. The total number of atoms present in 5 molecules of cane sugar is
a) 24 b) 120 c) 45 d) 225
3. The velocity of an object is said to be uniform when it covers
a) Equal distances in equal time intervals in a straight line
b) Unequal distances in equal time interval in a straight line
c) Equal distances in equal time intervals along a circular path
d) Unequal distances in equal time intervals along a circular path
4. The World Soil Day is observed on
a) July 17 b) December 5 c) August 15 d) September 17
5. Which of the following elements has symbol based on its Latin name?
a) Chlorine b) Sulphur c) Potassium d) Calcium
6. Which of the following graphs cannot represent the distance-time relation of an object ?



7. The gas produced when egg shell reacts with dilute sulphuric acid
a) Hydrogen b) Ammonia c) Carbon dioxide d) Oxygen
8. Sodium is a metal kept immersed in kerosene. This is because
a) it absorbs impurities b) it becomes softer
c) it melts in air d) it reacts with air and moisture

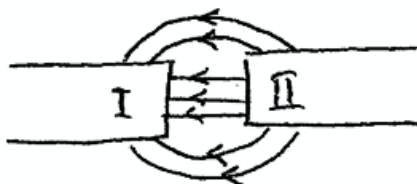
9. Which of these components is not needed for photosynthesis?
 a) Water b) Oxygen c) Chlorophyll d) Carbon dioxide
10. The weathering of rocks caused due to the temperature variations is referred as
 a) Biological weathering b) Chemical weathering
 c) Mechanical weathering d) Formation of fossils
11. How is oleum prepared?
 a) $\text{SO}_2 + \text{H}_2\text{O}$ b) $\text{SO}_3 + \text{conc. H}_2\text{SO}_4$
 c) $\text{Conc. HCl} + \text{Conc. HNO}_3$ d) $\text{Conc. H}_2\text{SO}_4 + \text{Conc. HNO}_3$
12. The stage at which the food components become a part of our body during the process of nutrition is
 a) Egestion b) Ingestion c) Assimilation d) Absorption
13. Identify the correct pair in the following:
 a) Ribosome – Power house of the cell
 b) Golgi complex – Packing of materials etc., in small vesicles
 c) Mitochondria – Cellular waste storage
 d) Endoplasmic reticulum – stores water
14. The image formed by a concave lens is
 a) Always erect b) Always virtual
 c) Always diminished d) All of these
15. To move a body from rest state,
 a) Equal and opposite internal forces must be applied
 b) Internal forces must be applied in the same direction
 c) Equal and opposite external forces should be applied
 d) External forces must be applied in the same direction

SECTION B: EVERYDAY SCIENCE

16. Identify the fact which is the most related to Mangrove vegetation.
 a) It is also known as coniferous forest.
 b) It prevents erosion in river mouths and seacoasts.
 c) It is found in Rajasthan desert.
 d) It grows where there is seasonal rainfall.
17. Hecto-pascal is the unit used for representing
 a) Atmospheric humidity b) Atmospheric pressure
 c) Precipitation d) Wind speed
18. Match the columns:

| | |
|---------------------|---|
| (A) Igneous rocks | (I) Limestone |
| (B) Sedimentary | (ii) Marble rocks |
| (C) Metamorphic | (iii) Granite rocks |
| a) A-iii, B-ii, C-i | b) A-ii, B-iii, C-i |
| | c) A-iii, B- I, C-ii d) A-i, B-ii, C-iii |
19. A metal wire is stretched between two nails and plucked by a force at the middle. The frequency of vibration does not depend on
 a) Force applied b) Length of the wire
 c) Tension of the wire d) Nature of the metal
20. Rainbow is formed in the sky due to the phenomenon of
 a) Dispersion b) Reflection
 c) Scattering d) Both (a) and (b)

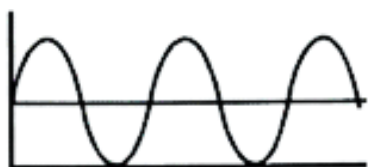
21. Solid part of the surface of the earth is termed as
 a) Hydrosphere b) Lithosphere c) Atmosphere d) Biosphere
22. The telescope which is located in space among the following is
 a) Galilean telescope b) Radio telescope
 c) Hubble's telescope d) Terrestrial telescope
23. 'Mangalyan' is India's prestigious
 a) Mars Orbital Mission b) Moon Orbital Mission
 c) Space Orbital Mission d) Saturn Orbital Mission
24. Richter scale is used to measure
 a) Temperature of stars b) Pressure at sea bed
 c) Intensity of earthquake d) Density of materials
25. Lowest temperature which can be theoretically obtained is
 a) -273°C b) -273°F c) 273 K d) -273 K
26. The type of plastic that is used to make non-stick cookware is
 a) Terylene b) Nylon c) Polyester d) Teflon
27. The diagram given below shows the magnetic field lines between two magnetic poles. Based on this, which of the following represent the poles correctly ?



- a) I = S, II = S b) I = N, II = N c) I = N, II = S d) I = S, II = N
28. The basic principle of chromatography is
 a) Adsorption b) Attraction c) Absorption d) Diffusion
29. The non-metal which remains in liquid state at room temperature is
 a) Mercury b) Sulphur c) Bromine d) Iodine
30. The type of cell commonly used in mobile phones and laptops is
 a) Mercury cell b) Lithium ion cell
 c) Nickel-cadmium cell d) Dry cell

SECTION C: MINDATHON LITTLE SCIENTISTS

31. The cutting and gathering of mature crop is a process named X. After this, grains are separated from the crop through the process called Y. Next, Z is the process of separating the hay and chaff from the grains. Which of the following statements is/are correct regarding X, Y and Z?
 a) Z is done with the help of wind in which grains along with husk is allowed to fall from a height.
 b) X is done mechanically by combine and manually by plough and harrow.
 c) X is threshing whereas Y is winnowing.
 d) Both (a) and (b) are correct.
32. Following waves are produced on water surface when a vibrating tuning fork was touched with it.

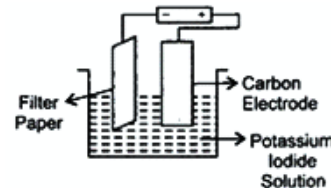


Which factor of the wave would increase if the tuning fork was hit harder before touching the surface of water?

- a) frequency b) wavelength c) amplitude d) time period

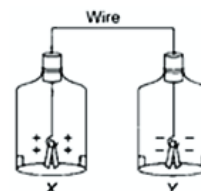
33. In the following figure, the filter paper contains starch soaked in potassium iodide solution. When we write on the wet paper, it shows a blue black colour.

- a) Iodine is liberated at the anode.
b) Iodine turns blue-black in the presence of starch.
c) Iodine is liberated at the cathode.
d) Both (a) and (b) are correct.



34. Two oppositely charged electrosopes are connected with a copper wire as shown in figure. Which of the following will happen?

- a) Electrons will move from X to Y.
b) Protons will move from X to Y.
c) Electrons will move from Y to X.
d) Protons will move from Y to X.

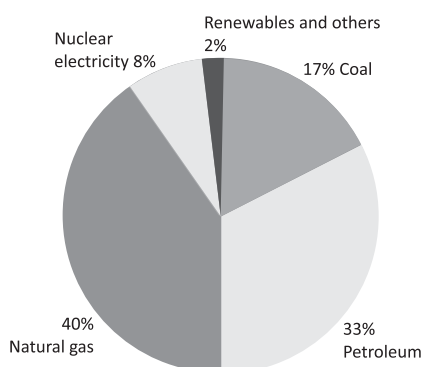


35. The sound of thunder is heard 5 s after the flash of lightning is seen. If the speed of sound is 330 m/s, how far is the cloud from you?

- a) 1650 m b) 660 m c) 770 m d) 16500 m

SECTION D: CASE STUDIES

- I. The energy sources used in a country in year 2020 are shown in the pie chart below. Observe it carefully and answer the questions which follow:



36. What percentage of energy from fossil fuels did the country consume in that year?
a) 40% b) 33% c) 17% d) 90%
37. What problem with the energy consumption pattern do you observe in the above case?
a) Very less renewable sources are used.
b) Energy from nuclear sources should be increased.
c) Use of natural gas should be reduced.
d) More of coal than petroleum should be consumed.
38. The most polluting sources of energy used by this country are
a) Coal b) petroleum c) natural gas d) (a) and (b) both
39. Which fossil fuel used by country is a clean fuel?
a) Coal b) petroleum c) natural gas d) (a) and (b) both
40. If a hydel power station was set up in the country, the share of which type of source would increase?
a) Renewable source b) nuclear power c) fossil fuels d) none of these

- II. To make a winning move in a volleyball match, players frequently push the moving ball to their teammates. There are instances when pushing or smashing the ball returns it to the opposing side of the court. A batsman in cricket plays his or her stroke by hitting the ball with force using the bat.
41. What kind of force is applied by a batsman when he hits the ball?
- a) Magnetic Force
 - b) Muscular Force
 - c) Frictional Force
 - d) Gravitational Force
42. Force exerted by a body can be defined as:
- a) Work done by it
 - b) Energy needed to do work
 - c) Push or Pull
 - d) all of these
43. In the given example of volleyball game, what changes force brought about on the volleyball?
- a) Change in direction of motion
 - b) Change in shape
 - c) Change in physical state
 - d) Both (a) and ©
44. How do you describe state of motion?
- a) change in speed
 - b) change in direction of motion
 - c) state of rest
 - d) all of these
45. The examples showing that mechanical force can change the shape of an object do not include
- a) rolling a chapati
 - b) Stretching a rubber band
 - c) compressing a spring
 - d) expansion by heating