

21

The Competition in

Science & Research Skills

***Science & Research
Test I & II
MODEL PAPERS***

Class :VII



Eduranet

Intellectual Olympiad Foundation

(Promoted by Eduranet Educational Society (Regd. 309/09))

Hyderabad | India

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SYLLABUS**I) Physics**

1. Heat
2. Wind and Storm
3. Motion & Time
4. Electricity & Its Effects
5. Light

II) Chemistry

1. Fibre to Fabric
2. Acids, Bases and salts
3. Physical & Chemical Changes
4. Water
5. Soil

III) Biology

1. Nutrition in Plants
2. Nutrition in animals
3. Weather, Climate & Adaptation of an Animal
4. Respiration in organisms
5. Circulation & Excretion
6. Reproduction in Plants
7. Forcast

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SCIENCE & RESEARCH TEST-I

CODE: 2171

PRELIMS

Max. Marks : 75

Duration : 75 Mins.

General Instructions :

1. Please find the Answer Sheets (OMR) with in the envelop given to you.
2. Mention your Test Code, Student ID, Name, Class, Section and School Name on the OMR Sheet as per Question Paper and Hall Ticket.
3. This question paper contains 75 Questions, duration is 75 minutes.
4. Do rough work in the empty sheet provided along with this question paper.
5. Answer questions in OMR sheet only.
6. Don't write or tick anything on the question paper.
7. Use only Black or Blue Ball Point Pen or Dark Pencil to answer the question in OMR sheet.
8. Indicate the correct answer by darkening one of the 4 or 5 responses provided.
9. Submit only OMR sheet to the invigilator

-
-
1. **An atlas of India is drawn by taking scale 10 cm = 15000 km. If the actual distance between the cities of Bhopal and Cochin is 1500 km, the distance between the two places in the atlas will be ___ cm.**

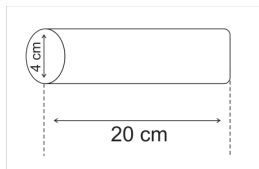
a) 10^2

b) 1

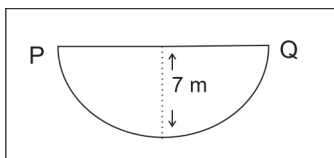
c) 10000

d) 1000

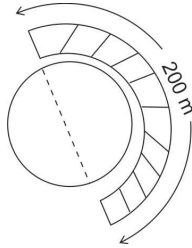
2. The weight of the given solid cylinder rod is 2512 N, The density of the body is ___ kg m^{-3} .
(take $g = 10 \text{ s}^{-2}$)



- a) 2512 b) 25×12 c) 10^3 d) 10^6
3. The readings in a graduated cylinder are 10 cm^3 and 20 cm^3 respectively, before and after a metal alloy piece of mass 200 g is put in it. The density of the material of alloy is ___ kg m^{-3}
- a) 2×10^3 b) 2×10^4
c) 2×10^5 d) 2×10^6
4. $20 \text{ m s}^{-1} = \text{_____ km h}^{-1}$
- a) 12.5 b) 72 c) $50/9$ d) 32
5. A car is moving along a semicircular track as shown in the figure in a duration of 2π second from P to Q, then choose the correct statement(s)
- a) The distance covered by the car is 14 m.
b) The average velocity of the car is 2.23 m s^{-1}
c) The average speed of the car is 3.5 m s^{-1}
d) Both (b) and (c)



- 6. A train of length 200 m is moving along a circular path as shown in the figure. If it completes one rotation with a speed of 54 km h^{-1} , then the time taken by it to trace the path is ___ seconds.**




- a) 25 b) 13.33
 c) 26.66 d) 26
- 7. Ultrasonic sound waves are used in ____.**
- a) dishwashers
 b) medical diagnostics
 c) detection of flaws in materials
 d) All the above
- 8. The sound produced by a siren given by a company reaches a person on the road at a distance of 110 m in ___ s. (Velocity of sound in air is 330 m s^{-1})**
- a) 3 b) 4 c) $1/3$ d) 0.5
- 9. The frequency of a vibrating body is 100 Hz. Its time period is ____.**
- a) 0.01 s b) 100 s
 c) 0.01 s^{-1} d) 100 s^{-1}

10. Arrange the following steps in sequential order to demonstrate the magnetic effect of the electric current using magnetic compass.

- Wind an insulated conducting wire around the magnetic compass such that the axis of the coil is directed along east - west direction and connect the free ends of the wire to a cell through a switch.
- Take a magnetic compass
- When current flows through the conducting wire, it behaves as a magnet and deflects the compass needle.
- When the switch is closed, the magnetic needle in the compass deflects from its initial position and when the switch is opened, the needle comes back to its initial position.

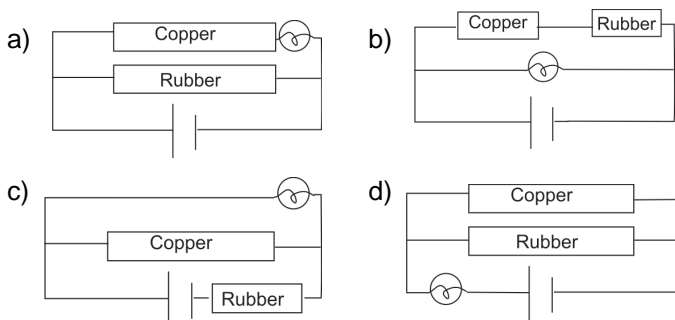
- | | |
|---------|---------|
| a) badc | b) cbad |
| c) acbd | d) abcd |

11. Three dry cells are connected as shown in the

 **figure. If e.m.f of each cell is 2V, then the total e.m.f. of the combination is ____ V.**

- | | |
|------|------|
| a) 2 | b) 6 |
| c) 3 | d) 4 |

12. In which circuit will the bulb will not light up ?



13. Element refers to

- a) the coil of wire used in various electrical appliances based on heating effect of current
- b) the coil of wire used in various electrical appliances based on magnetic effect of current
- c) both the above
- d) none of these

14. The angle between the direction of applied force and the main plough (or blade of plough), in a wooden plough is ____.

- a) greater than 90°
- b) 90°
- c) 60°
- d) less than 90°

15. Which among the following angles can be the maximum angle through which a divider can be stretched to draw a circle?

- a) 180°
- b) 90°
- c) 45°
- d) 160°

16. If the mass of bod on the surface of moon is denoted by M_m and that on the earth by M_e , then

- a) $M_m = \frac{M_e}{6}$
- b) $M_m = 6 M_e$
- c) $M_m = \frac{Me}{2}$
- d) $M_m = M_e$

17. The weight of a body on the surface of earth is W_e . When the density of the body is doubled by keeping its radius constant, its weight on the surface of the moon is found to be W_m ; then

$$\frac{W_m}{W_e} = \text{_____} \quad (g_e = 6g_m)$$

- a) 1 : 1 b) 1 : 3 c) 3 : 1 d) 6 : 1
18. The bob of a simple pendulum is set in motion (to and fro motion). In the beginning its time period was 1s. After 30 oscillations, the bob appears to have slowed down; the time of one complete oscillation then would be
- a) 1.5 s b) 2s
c) 1s d) can't predict
19. If the motion of the body remains the same after the 19th minute, what will be the total distance covered by the end of 25 minutes?
- a) 26 m b) 28 m
c) 34 m d) 40 m

20. Math column -I with Column-II and select the correct answer using the code given below the columns.

Column-I	Column-II
A) Convex lens B) Convex mirror C) Concave mirror D) Curved mirror	p) Used by dentist to see enlarged image of teeth q) Used as a magnifying glass r) Can form image of the object spread over large area. s) Common example of a spherical mirror

- a) $A \rightarrow (p); B \rightarrow (q); C \rightarrow (r); D \rightarrow (s)$
b) $A \rightarrow (q); B \rightarrow (r); C \rightarrow (p); D \rightarrow (s)$
c) $A \rightarrow (r); B \rightarrow (s); C \rightarrow (q); D \rightarrow (p)$
d) $A \rightarrow (s); B \rightarrow (p); C \rightarrow (r); D \rightarrow (q)$

21. The final temperature of a mixture of water obtained by mixing equal volumes of water at 2°C and 4°C will be

- a) 1°C
b) 2°C
c) 3°C
d) 4°C

22. Iron, hydrogen peroxide and carbon dioxide. When same amount heat is supplied to these three substances, which expands most?

- a) Hydrogen peroxide
b) Carbon dioxide
c) Iron
d) All of these

23. Which of the following statement is true?

- a) Metal are bad conductors
b) In gases, heat is transferred by conduction
c) In conduction, molecules move from hotter to colder parts transmitting energy
d) Metals conduct heat better than the gases

24. At a particular time of a day, the ratio of height of an object and the length of its shadow is 'x'. Using this, calculate the height of a tree if the length of the shadow of trees is L.

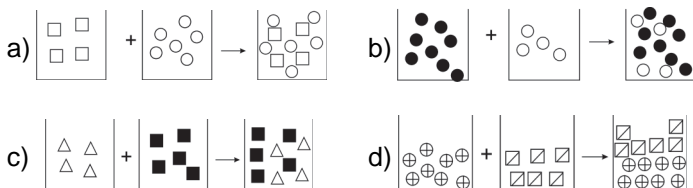
- a) $\frac{X}{L}$
b) $x \times L$
c) $x + L$
d) $L - x$

25. If the angle of incidence is 50°, then calculate the angle between the incidence ray and the reflected ray.

- a) 50°
b) 100°
c) 130°
d) 80°

26. Among the following which is a pair of soft metals?
- a) Sodium, potassium
 - b) Potassium, magnesium
 - c) Magnesium, calcium
 - d) Calcium, manganese
27. Identify the odd one among the following with respect to tensile strength as well as ductility.
- a) Gas carbon
 - b) Diamond
 - c) Graphite
 - d) Carbon fibre
28. Identify the formula of the corresponding hydride of a nonmetal 'X' which attains octet by gaining two electrons.
- a) XH
 - b) XH₃
 - c) XH₄
 - d) XH₂
29. Identify the ratio of the coefficients of the products CuO, NO₂ and H₂O formed respectively when hydrated copper nitrate is thermally decomposed.
- $$\text{Cu}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O} \rightarrow \text{CuO} + \text{NO}_2 + \text{H}_2\text{O} + \text{O}_2$$
- a) 2 : 3 : 1
 - b) 1 : 2 : 3
 - c) 1 : 1.5 : 1
 - d) 3 : 2 : 1
30. Two salts "X" and "Y" are taken in two test tubes "A" and "B" respectively and subjected to heating. Water is added to two test tubes, in case of "A" salt regains its original colour and in case of "B" water starts boiling. Then X and Y may be respectively
- a) blue vitriol and limestone
 - b) blue vitriol and baking soda
 - c) nitre and limestone
 - d) nitre and washing soda

31. Blue coloured solid anhydrous cobalt chloride is exposed to atmosphere and forms pink coloured solid. From this, we can infer that cobalt chloride is
- a) hygroscopic b) deliquescent
 c) efflorescent d) None of these
32. When a few drops of phenolphthalein are added to sample 'A' it turned pink. To this pink coloured solution we then added a few drops of sample 'B' with continuous stirring and the pink colour disappeared. This indicates the nature of samples 'A' and 'B' are
- a) sample 'A' is acidic and sample 'B' is basic
 b) sample 'A' is basic and sample 'B' is acidic
 c) sample 'A' is basic and sample 'B' is neutral
 d) sample 'A' is acidic and sample 'B' is neutral
33. The process of crystallisation is used to obtain pure compound from an impure sample. Which of the following statements is/ are correct?
- a) Process of crystallisation is an example of a Chemical change
 b) Process of crystallisation is an example of a physical change.
 c) Process of crystallisation involves an irreversible change
 d) All the above are correct
34. The four diagrams below represent the results of mixing atoms of different substances. Each atom is represented by a different symbol. Which diagram correctly models a chemical change?



35. The acid present in tea is :

- a) tannic
- b) lactic
- c) tartaric
- d) citric

36. Which of the following is a basic salt?

- a) $MgCl_2$
- b) $NaCl$
- c) $Pb(OH)Cl$
- d) $CaCl_2$

37. Two non-metallic oxides 'A' and 'B' are produced by burning of fossil fuel. 'A' pollutes both air and water. 'B' does not cause water pollution and its presence in water is essential. It causes air pollution. Identify A and B.

- a) NO_2, SO_2
- b) SO_2, CO
- c) SO_2, CO_2
- d) CO_2, NO_2

38. Though zinc coating is cheaper than tin coating on iron, only tin coating is used for iron containers for storing food materials. Identify the correct reason.

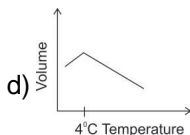
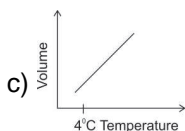
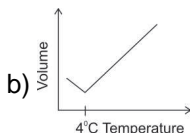
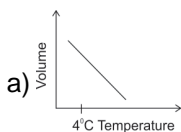
- a) Zinc is less reactive than tin.
- b) Zinc acts as a preservative.
- c) Tin does't react with the components of food material.
- d) Tin lowers the ambient temperature and thus prevents, spoilage of food.

39. During the formation of rain, When water vapour changes back to liquid in the form of rain drops:

- a) heat is absorbed
- b) heat is released
- c) heat is first absorbed and then released
- d) there is no exchange of heat

- 40. Which of the following doesn't show that air has pressure?**
- a) Riding a bicycle against the wind
 - b) Flying a kite
 - c) Ball falling to the ground
 - d) Drinking a soft drink through a straw
- 41. The amount of heat energy required to increase temperature of 'X' g of water by**
- a) 0.5 g
 - b) 15 g
 - c) 1.5 g
 - d) 7.5 g
- 42. The water obtained in ion-exchange process is**
- a) devoid of dissolved salts and minerals
 - b) devoid of only minerals
 - c) potable
 - d) called mineral water
- 43. Any sample of water that contains more than 2% of dissolved salts, particularly common salt, is called**
- a) potable water
 - b) saline water
 - c) distilled water
 - d) decanted water
- 44. Which of the following are removed by use of skimmer in WWTP?**
- a) Oils
 - b) Greases
 - c) Both of these
 - d) None of these
- 45. The density of water is greatest at:**
- a) 0°C
 - b) 4°C
 - c) 100°C
 - d) 37°C

46. Which of the following correctly shows the expansion of water with rise in temperature ?



47. Lead is used for making fusible alloy constituted of lead and tin in _____ ratio by mass.

a) 1 : 2

b) 2 : 1

c) 1 : 3

d) 1 : 1

48. _____ is used as one of the raw materials for making soft soap.

a) Sodium carbonate

b) Alcohol

c) Potassium hydroxide

d) Finely ground pumice stone

49. Which of the following are not paired correctly?

- a) Baking soda - sodium hydrogen carbonate
- b) Calamine - Zinc carbonate
- c) Slaked lime- calcium oxide
- d) Common salt - sodium chloride

50. The waste from a paper factory contains high amount of hydrochloric acid. How should we treat the waste, before disposal, to make it safe?

- a) Treat it with chemicals containing sodium
- b) Treat it with chemicals containing sulphuric acid
- c) Treat it with chemicals containing sodium chloride
- d) Treat it with pure hydrochloric acid





51. The length of small intestine and large intestine are respectively

- a) 7.5 m and 1.5 m
- b) 1.5 m and 7.5 m
- c) 7.5 m and 1.0 m
- d) 1.5 m and 7.0 m

52. Select the one who first discovered one celled animals

- a) Charaka
- b) Anton Leewenhoek
- c) Marcello Malpighi
- d) Galen

53. Which of the organisms shown below consists of only one cell?

- a) pine tree 
- b) Ameoba 
- c) Mushroom 
- d) Earth worm 

54. The function of nodulated roots is:

- a) to store food
- b) to provide extra strength
- c) to perform photosynthesis
- d) to give shelter to bacteria

55. Veins

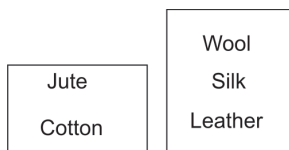
- a) absorb water and minerals from the soil
- b) absorb carbon dioxide from the atmosphere
- c) transport water, food and minerals in a leaf
- d) release oxygen and carbon dioxide into the atmosphere

56. Partially digested food in ruminants is

- a) Chyme
- b) Cud
- c) Bolus
- d) All of these

57. In Amoeba which of the following helps in digestion.

- a) Pseudopodia
- b) Cytoplasm
- c) Nucleus
- d) Vacuole

58. Given below are two groups of materials used to make dress articles.

on what basis these have been grouped?

- a) Synthetic
- b) Natural
- c) A & B
- d) None of these

59. In which of the following process threads are taken out from the cocoons?

- a) Scorching
- b) Shearing
- c) Reeling
- d) Spinning

60. Which of the following fibres spun and woven into woollen cloth?

- a) Longer fibres
- b) Shorter fibres
- c) Fluffy fibres
- d) None of these

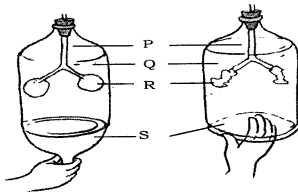
61. The actual site of gaseous exchange in respiratory system is

- a) trachea
- b) bronchioles
- c) alveoli
- d) all the above

62. The respiratory organ in cockroach are

- a) lungs
- b) gills
- c) lenticels
- d) spiracles

63.



In the given figure diaphragm is represented by

- a) P
- b) Q
- c) R
- d) S

64. In fishes gills are the respiratory organs. Gills are projections of which of the following parts?

- a) Nostril
- b) Alimentary canal
- c) skin
- d) None of these

65. Deoxygenated blood

- a) flows to lungs from the left side of the heart
- b) flows to lungs from the right side of the heart
- c) flows to right side of the heart from the lungs
- d) flows to left side of the heart from the lungs

66. Blood from the left ventricle is pumped to

- a) lungs
- b) left auricle
- c) right ventricle
- d) all parts of the body

67. The ultimate cause of the movement of water against gravity in a tree is

- a) osmosis
- b) transpiration
- c) imbibition
- d) photosynthesis

68. Which of the following is used as artificial kidney in kidney failure patients?

- a) Filter
- b) Angiogram
- c) Dialysis
- d) Ventilation

69. Seeds are not a product of reproduction in

- a) lemons
- b) potatoes
- c) tomatoes
- d) jowar

70. Which of the following reproduces by Fragmentation ?

- a) Spirogyra
- b) Chlamydomonas
- c) Bryophyllum
- d) All of these

71. Sweet potatoes reproduce from

- a) modified leaves
- b) modified stem
- c) modified roots
- d) modified flowers

72. In the polar regions the minimum temperature in winter may be as low as

- a) 5°C
- b) 0°C
- c) -15°C
- d) -37°C

73. Which part of the elephant helps it to keep cool in the hot and humid climate of rain forests?

- a) Trunk
- b) Tusk
- c) Ears
- d) Nose

74. The greatest effort of the heart is exerted by the

- a) right auricle
- b) right ventricle
- c) left auricle
- d) left ventricle

75. The process of fertilization of angiosperms is called

- a) Single fertilisation
- b) Double Fertilisation
- c) Multiple fission
- d) None of these

KEY TO MODEL PAPER - I

- | | | | | | |
|-------|-------|-------|-------|-------|-------|
| 1. b | 2. d | 3. b | 4. b | 5. d | 6. c |
| 7. d | 8. c | 9. a | 10. a | 11. b | 12. c |
| 13. a | 14. d | 15. d | 16. d | 17. b | 18. c |
| 19. c | 20. a | 21. c | 22. b | 23. d | 24. b |
| 25. b | 26. a | 27. d | 28. a | 29. b | 30. a |
| 31. a | 32. b | 33. b | 34. b | 35. a | 36. c |
| 37. c | 38. c | 39. b | 40. c | 41. c | 42. a |
| 43. b | 44. c | 45. b | 46. b | 47. d | 48. c |
| 49. c | 50. a | 51. a | 52. b | 53. b | 54. d |
| 55. c | 56. b | 57. d | 58. b | 59. c | 60. b |
| 61. c | 62. d | 63. d | 64. c | 65. b | 66. d |
| 67. b | 68. c | 69. b | 70. a | 71. c | 72. d |
| 73. c | 74. d | 75. b | | | |

SCIENCE & RESEARCH TEST-II

CODE: 2172

FINALS

Max. Marks : 60

Duration : 60 Mins.

General Instructions :

1. Please find the separate Answer Sheets along with the question paper.
2. Mention your Test Code, Student ID, Name, Class, Section, Contact no. and School Name on the Answer Sheet as per Question Paper and Hall Ticket.
3. This question paper contains V sections, duration is 60 minutes.
4. Please read the instructions carefully before attempting the question.
5. Answer questions in Answer Sheet only.
6. Don't write or tick anything on the question paper.
7. Use only Black or Blue Ball Point Pen to answer the question in Answer Sheet.
8. Submit only answer sheet(s) to the invigilator.

SECTION - I

10 × 1 = 10m

DIRECTIONS : (1 - 10) – Each question contains statements given in two columns which have to be matched. Statements in column A have to be matched with statements in column B and write in the answer sheet.

Column - A

- 1) Ascorbic acid
- 2) Boric acid

Column - B

- A) Added as a supplement to common salt
- B) Vitamin D

- | | |
|-----------------------|----------------------------|
| 3) Sodium benzoate | C) Food preservative |
| 4) Ammonium sulphate | D) Fertilizer |
| 5) Sodium iodate | E) Used as an antiseptic |
| 6) Mineral acid | F) Acidic substance |
| 7) Sour taste | G) Soapy to touch |
| 8) NaOH | H) HCl |
| 9) CaO | I) Slaked lime |
| 10) Ca(OH)_2 | J) Quick lime |
| | K) Vitamin C |
| | L) H_2SO_4 |

SECTION - II**10 × 1 = 10m**

DIRECTIONS: (11 - 20) – Read the following statements and write your answer as true or false with reasons or solutions in the answer sheet.

- Heat travels at different speed in different materials.
- Science of locating events in time is called chronology.
- An electric fuse consists of a thin wire made of a material that do not melt easily when heated.
- Sodium bicarbonate is a basic salt.
- Both burning of candle and melting of ice are same type of change.
- Sludge is the light floatable waste that rises to the top during waste water treatment.

17. Plants manufacture food in the form of proteins.
18. Transport of materials in Amoeba occurs through gills.
19. Arteries are superficially placed.
20. Reproduction by spores is a method of asexual reproduction.

SECTION - III

10 × 1 = 10m

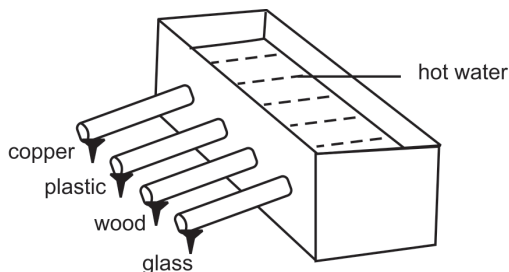
DIRECTIONS: (21 - 30) – Complete the following statements with an appropriate word/term to be written in the answer sheet.

21. Pure water boils at _____ and freezes at _____.
22. The time taken by pendulum to complete one oscillation is called _____.
23. A microwave used in home converts _____ energy into _____ energy
24. A reflecting surface which curves _____ is concave mirror.
25. The raw silk is twisted to produce _____ silk.
26. A chemical change that is accompanied by evolution of heat is called _____ change.
27. The chemical formula of slaked lime is _____.
28. A magnifying glass is made of _____ lens.
29. Force per unit area exerted by a gas is _____.
30. For rusting of iron it must be exposed to oxygen and _____.

SECTION - IV

 $10 \times 1 = 10m$

DIRECTIONS: (31 -40) – Identify the correct answer from the given options and write in the answer sheet.



31. He used four rods of same length and thickness that were made of different materials. He stuck a thumbtack to the end of each rod with wax. He recorded the time taken for each thumbtack to drop. The aim of experiment is to
- Find out if wax is a good conductor of heat.
 - Find out which material is good conductor of heat.
 - Find out if heat can pass through water.
 - Find out to if heat can travel from hot water to thumbtack.
32. A violent wind storm occurring over land is called
- Tornado
 - Cyclone
 - Hurricane
 - Typhoon
33. A water pipe has water flowing through it. Which of the following changes would increase the rate of water flow through the pipe?
- Increase of water pressure
 - Increase in the length of pipe
 - Making the pipe coiled instead of straight
 - Making the pipe narrower in diameter

34. A car covers a distance of 3 km in 5 minutes. It travels with a speed of

I. 100 m/s

II. 36 km/h

III. 1000 cm/s

IV. 600 m/min

a) I and II only

b) II and III only

c) I, III and IV only

d) II, III and IV only

35. Select the one that is used as a cleansing agent?

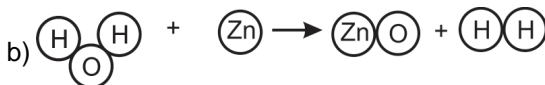
a) $Mg(OH)_2$

b) NaOH

c) NH_4OH

d) $Al_2(SO_4)_3$

36. Which of the following equations is correct?



37. Respiration is a chemical reaction that releases energy from food. The gaseous reactants and products in this reaction arei..... andii....., respectively.

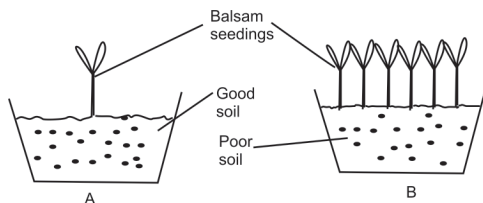
a) i- Carbon dioxide; ii- oxygen and water vapour

b) i - Carbon dioxide; ii - water vapour

c) i - Water vapour,; ii - oxygen and hydrogen

d) i- Oxygen; ii- carbon dioxide and water vapour

38. Some pupils wanted to find out if overcrowding affected the growth of plants. They set up two experiments as shown below in the garden.



- They did not conduct a fair test because _____.
- The number of plants in both should be the same
 - The type of soil used in both should be the same
 - The size of the pots used should be different
 - The place where the pots were placed should be different.
39. Which of the following is an example of excretion?
- Release of insulin from pancreas
 - Release of saliva from the salivary glands
 - Removal of carbon dioxide from the lungs
 - Removal of faeces from the alimentary canal
40. Which digestive processes takes place in mouth?

	Chemical digestion	Physical digestion
a)	✓	✓
b)	✓	×
c)	×	✓
d)	×	×

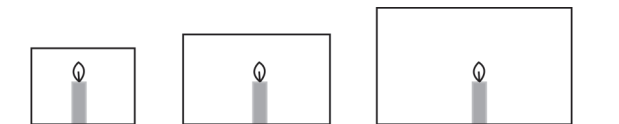
Key -

✓ = takes place in the mouth

✗ = does not take place in the mouth

SECTION - V**10 × 2 = 20m****Answer the following Questions (41 - 50)****(Concept, Application, Skill based Questions)**

41. i) Which of these candles will burn the longest and why?



ii) What happens when a fuel burns?

42. What precautions one should take when thunderstorm is accompanied by lightning?
43. Sanjana's plane travelled at an average speed of 600 km/h. She departed at 1300 hrs. and arrived at her destination at 1545 hrs. How far had the plane travelled?
44. There is a demand to ban the use of polythene bags. Explain this in terms of soil?
45. Can cloud be used as a tool to forecast weather? Explain.
46. How do oil spills affect sea animals and plants?
47. Do plants need nitrogen? Can plant use nitrogen in gaseous form? Discuss.
48. It is advised by doctors and our parents not to eat food in a hurry. Can you give a reason for it?
49. How is the blood leaving from the left side of the human heart different from blood leaving the right side?
50. Should we consider sweat as an excretory product? Yes or no. Give explanation.

SOLUTIONS TO MODEL PAPER - II**SECTION – I****Match the Following**

- | | |
|----------|---------|
| 1) → K ; | 2) → E; |
| 3) → C; | 4) → D; |
| 5) → A | 6) → H; |
| 7) → F; | 8) → G; |
| 9) → J; | 10) → I |

SECTION – II**True / False**

- | | | |
|-----------|-----------|-----------|
| 11) True | 12) True | 13) False |
| 14) False | 15) True | 16) False |
| 17) False | 18) False | 19) False |
| 20) True | | |

SECTION – III**Fill in the Blanks**

- | | | |
|-------------------------|-----------------|----------------------|
| 21) 100°C , 0°C | 22) time period | 23) electrical, heat |
| 24) inward | 25) thrown | 26) Exothermic |
| 27) Ca(OH) ₂ | 28)convex | 29) pressure |
| 30) water | | |

SECTION – IV**Multiple Choice Questions**

- 31) b 32) a 33) a 34) d
35) c 36) b 37) d 38) a
39) c 40) a

SECTION – V**Answer the following questions**

41. The candle under the biggest container will burn the longest because it has most air. Air is necessary for fuels to burn
42. Do not take shelter under a tree
Do not take shelter under umbrella with metallic end
Do not sit near a window
Take shelter in a car or a bus
Avoid being close to any metallic object.
43. Distance covered by plane = speed × Time
Average speed = 600 km/h
Time taken = $1545 - 1300 = 245 \text{ hr} = 2\frac{3}{4} \text{ hr}$
Distance = $600 \times 2\frac{3}{4} = 1650 \text{ km}$

44. Polythene bags and plastics pollute the soil. They also kill the organisms found in soil. Hence
45. Yes, clouds can be used as a tool to forecast weather. The type and direction of clouds gives a rough idea about the weather changes.
46. Oil spreads over the surface of water and prevents sunlight, air from dissolving in water.
47. Yes, plants need nitrogen in soluble form to synthesize protein. Plants cannot use nitrogen in gaseous form
48. because you may get a choking sensation or hiccups
49. Right and left chambers are separated by a muscular wall that prevents the mixing of blood.
50. Since sweat contains salt, excess of water & small amount of urea, it is considered as an excretory product.