

Sample/Pre-Board Paper 7
Class X Term 1 Exam Nov -Dec 2021
Science (086)


Time: 90 Minutes

General Instructions:

1. The question paper contains three sections.
2. Section A has 24 questions. Attempt any 20 questions.
3. Section B has 24 questions. Attempt any 20 questions.
4. Section C has 12 questions. Attempt any 10 questions.
5. All questions carry equal marks.
6. There is no negative marking.

Section A

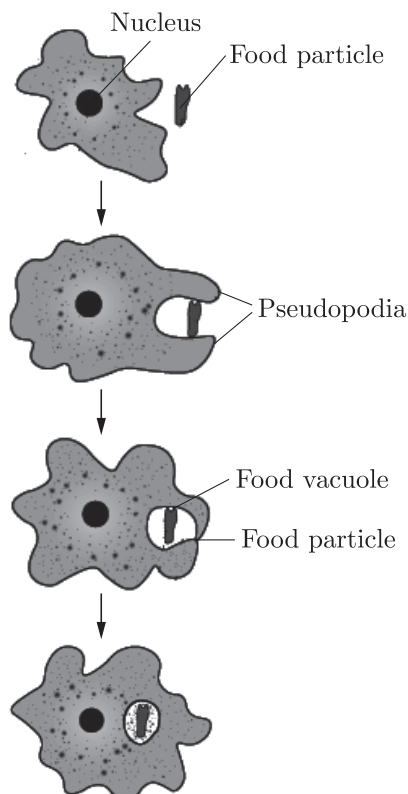
Section – A consists of 24 questions. Attempt any 20 questions from this section.
The first attempted 20 questions would be evaluated.

1. When hydrogen sulphide gas is passed through a blue solution of copper sulphate, a black precipitate of copper sulphide is obtained and the sulphuric acid so formed remains in the solution. The reaction is an example of
 - (a) a combination reaction
 - (b) a displacement reaction
 - (c) a decomposition reaction
 - (d) a double displacement reaction
2. Equal volumes of hydrochloric acid and sodium hydroxide solutions of same concentration are mixed and the pH of the resulting solution is checked with a pH paper. What would be the colour obtained?
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

 - (a) Red
 - (b) Yellow
 - (c) Yellowish green
 - (d) Blue
3. Aluminium is used for making cooking utensils. Which of the following properties of aluminium are responsible for the same?
 1. Good thermal conductivity
 2. Good electrical conductivity
 3. Ductility
 4. High melting point
 - (a) 1 and 2
 - (b) 1 and 3
 - (c) 2 and 3
 - (d) 1 and 4
4. Which of the following is not a characteristic of a chemical reaction?
 - (a) Formation of precipitate
 - (b) Change in colour
 - (c) Change in temperature
 - (d) None of the above
5. A solution turns red litmus blue, its pH is likely to be
 - (a) 1
 - (b) 4
 - (c) 5
 - (d) 10
6. Which of the following processes does not involve either oxidation or reduction?
 - (a) Formation of slaked lime from quick lime
 - (b) Heating mercuric oxide
 - (c) Formation of manganese chloride from manganese oxide
 - (d) Formation of zinc from zinc blend
7. Which one of the following processes involve chemical reactions?
 - (a) Storing of oxygen gas under pressure in a gas cylinder
 - (b) Liquefaction of air
 - (c) Keeping petrol in a china dish in the open
 - (d) Heating copper wire in presence of air at high temperature
8. On putting a few drops of X liquid on the pH paper the colour of pH paper changes to violet. The liquid X is
 - (a) Dilute sodium hydroxide
 - (b) Dilute hydrochloric acid
 - (c) Dilute acetic acid
 - (d) Water
9. The pH of the gastric juices released during digestion is
 - (a) less than 7
 - (b) more than 7
 - (c) equal to 7
 - (d) equal to 0



10. Which one reaction shows the property of double displacement reaction?
- $\text{CuSO}_4 + \text{Zn} \longrightarrow \text{ZnSO}_4 + \text{Cu}$
 - $\text{Cu} + 2\text{AgNO}_3 \longrightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$
 - $\text{NaOH} + \text{HCl} \longrightarrow \text{NaCl} + \text{H}_2\text{O}$
 - None of these

11. Identify the micro-organism whose nutrition type is shown below :



- Food bacteria
- Yeast
- Fungus
- Amoeba

12. The green organelle on surface of leaves containing chlorophyll are known as
- Xylem
 - Epidermis
 - Chloroplasts
 - Vascular bundle

13. To differentiate a living from non-living the movement of is needed.
- Molecular structure
 - Non-static movement
 - In organic structure
 - Movement

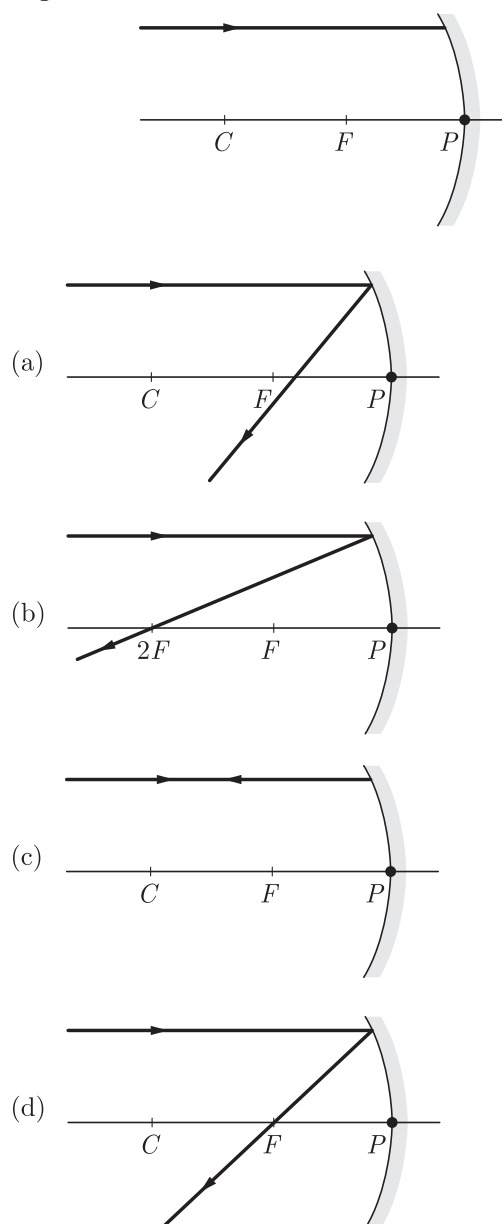
14. During the process of photosynthesis, absorption of light energy is done by
- Leaf
 - Midrib
 - Vein
 - Chlorophyll

15. Process of conversion of light energy to chemical energy and splitting of water molecules into hydrogen and oxygen in plants is known as
- Photosynthesis
 - Photoperiodism
 - Plant nutrition
 - Plant hormone functions

16. Which plants take up carbon dioxide at night and prepare an intermediate?
- Desert plants
 - Bamboo
 - Coattails
 - Palm tree

17. A convex mirror is used to form the image of an object. Then which of the following statement is wrong
- The image lies between the pole and the focus
 - The image is diminished in size
 - The image is erect
 - The image is real

18. Which of the following ray diagrams is correct for the ray of light incident on a concave mirror as shown in Figure?



19. Where should an object be placed in front of a convex lens to get a real image of the size of the object?
- At the principle focus of the lens
 - At twice focal length
 - At infinity
 - Between the optical centre of the lens and its principle focus

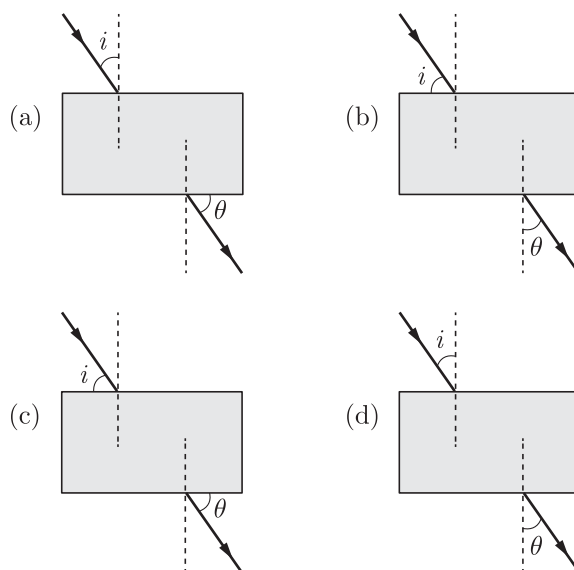
20. A spherical mirror and a thin spherical lens each has a focal length of -15 cm . The mirror and the lens are likely to be-
- Both concave
 - Both convex
 - The mirror is concave and lens is convex
 - The mirror is convex, but the lens is concave

21. A ray of light incident on a plane mirror makes an angle of 20° with the mirror. Then the angle between the incident ray and the reflected ray is-
- 70°
 - 90°
 - 120°
 - 140°

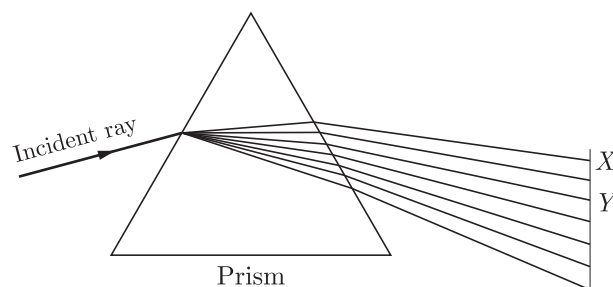
22. A student has to do the experiment on finding the focal length of a given concave mirror by using a distant object. Out of the following set ups 1, 2, 3, 4 available to her.
- a screen, a mirror holder and a scale.
 - a mirror holder, a screen holder and a scale.
 - a screen holder and a scale.
 - a mirror holder and a screen holder.
- The set up that is likely to give her the best result is the set-up labelled as:
- 1
 - 2
 - 3
 - 4

23. A student does the experiment on tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. He can get a correct

measure of the angles of incidence and the angle of emergence by following the labelling indicated in figure.



24.



Dispersion of light by glass prism is shown in the above figure. Here x and y indicates and colour respectively.

- red, blue
- red, indigo
- red, yellow
- violet, green

Section B

Section - B consists of 24 questions (Sl. No.25 to 48). Attempt any 20 questions from this section. The first attempted 20 questions would be evaluated.

25. One of the constituents of baking powder is sodium hydrogen carbonate, the other constituent is
- hydrochloric acid
 - tartaric acid
 - acetic acid
 - sulphuric acid
26. Which of the following is (are) true when HCl(g) is passed through water?
- It does not ionise in the solution as it is a covalent compound.
 - It ionizes in the solution.

- It gives both hydrogen and hydroxyl ion in the solution.
 - It forms hydronium ion in the solution due to the combination of hydrogen ion with water molecule.
- Only 1
 - Only 3
 - 2 and 4
 - 3 and 4
27. When zinc is added to a solution of iron (II) sulphate than it would displace from the solution
- Zinc
 - Sodium
 - Iron
 - None of these

28. Match the items in column I with the items in column II.

	Column I		Column II
1.	Iron	A	Liquid at room temperature
2.	Copper	B	Deposition of reddish- brown layer on exposure to moist air.
3.	Potassium	C	Can be cut easily with a knife.
4.	Mercury	D	Formation of a greenish layer on exposure to moist air.

Select the correct alternative.

- (a) 1- A, 2- C, 3- D, 4- B
 (b) 1- B, 2- D, 3- C, 4- A
 (c) 1- C, 2- A, 3- B, 4- D
 (d) 1- D, 2- B, 3- A, 4- C
29. Common salt besides being used in kitchen can also be used as the raw material for making
- washing soda
 - bleaching powder
 - baking soda
 - slaked lime
- (a) 1 and 2
 (b) 1, 2 and 4
 (c) 1 and 3
 (d) 1, 3 and 4
30. Which one of the following four metals would be displaced from the solution of its salts by other three metals?
- (a) Mg
 (b) Ag
 (c) Zn
 (d) Cu
31. **Assertion :** pH of ammonium chloride solution is in acidic range.
Reason : Solution of a salt of weak base and strong acid is acidic.
- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
 (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
 (c) Assertion is true but Reason is false.
 (d) Assertion is false but Reason is true.
32. **Assertion :** Silver chloride turns grey is sunlight.
Reason : Silver is one of the least reactive metals.
- (a) Both Assertion and Reason are True and Reason is the correct explanation of the Assertion.
 (b) Both Assertion and Reason are True but Reason is not the Correct explanation of the Assertion.
 (c) Assertion is True but the Reason is False.
 (d) Both Assertion and Reason are False.

33. **Assertion :** Egestion in amoeba takes place through a permanent membrane present in them.

Reason : Cilia is absent in amoeba.

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
 (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
 (c) Assertion is true but Reason is false.
 (d) Both Assertion and Reason are false.

34. **Assertion :** Radius of curvature of a spherical mirror is half its focal length.

Reason : A ray of light incident parallel to principal axis after reflection passes through C .

- (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
 (b) Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
 (c) Assertion is true but Reason is false.
 (d) Both Assertion and Reason are false.

35. To protect tooth decay we are advised to brush our teeth regularly. The nature of the toothpaste commonly used is

- (a) acidic (b) neutral
 (c) basic (d) corrosive

36. Which of the following statements about the reaction given below are incorrect?



- Lead is getting reduced.
 - Carbon dioxide is getting oxidised.
 - Carbon is getting oxidised.
 - Lead oxide is getting reduced.
- (a) 1 and 2 (b) 3 and 4
 (c) 1 and 3 (d) 2 and 4

37. The functional unit of kidney is:

- (a) Nephron (b) Neuron
 (c) Glomerulus (d) Bowman's Capsule

38. The best long term solution for kidney failure is?

- (a) Dialysis (b) Kidney transplant
 (c) Surgery (d) Both (a) and (b)

39. Light enters from air to glass having refractive index 1.50. The speed of light in vacuum is $3 \times 10^8 \text{ ms}^{-1}$. The speed of light in the glass is-

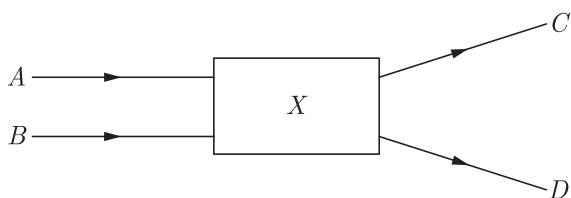
- (a) $2 \times 10^8 \text{ ms}^{-1}$ (b) $3 \times 10^8 \text{ ms}^{-1}$
 (c) $4 \times 10^4 \text{ ms}^{-1}$ (d) $5 \times 10^5 \text{ ms}^{-1}$

40. The angle between incident ray and reflected ray is 60° . What is the angle of incidence?

- (a) 30° (b) 40°
 (c) 60° (d) 50°

41. Where does the maximum exchange of material between blood and surrounding cells occur?
 (a) Heart (b) Capillaries
 (c) Arteries (d) Veins
42. Which of the following helps in maximum transport of oxygen?
 (a) Red blood corpuscles
 (b) Platelets
 (c) Plasma
 (d) White blood corpuscles
43. A candle placed 25 cm from a lens, forms an image on a screen placed 75 cm on the other end of the lens. The focal length and type of the lens should be
 (a) +18.75 cm and convex lens
 (b) -18.75 cm and concave lens
 (c) +20.25 cm and convex lens
 (d) -20.25 cm and concave lens

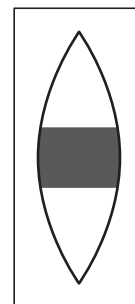
44. Light rays *A* and *B* fall on optical component *X* and come out as *C* and *D*.



The optical component is a

- (a) concave lens (b) convex lens
 (c) convex mirror (d) prism

45. What is the frequency of red colour of wavelength 8000 \AA ?
 (a) $3.75 \times 10^{14} \text{ Hz}$ (b) $3.75 \times 10^{12} \text{ Hz}$
 (c) $3.75 \times 10^{16} \text{ Hz}$ (d) none of these
46. A thin layer of water is transparent but a very thick layer of water is:
 (a) translucent (b) opaque
 (c) most transparent (d) none of these
47. If the central portion of a convex lens is wrapped in black paper as shown in the figure



- (a) No image will be formed by the remaining portion of the lens
 (b) The full image will be formed but it will be less bright
 (c) The central portion of the image will be missing
 (d) There will be two images each produced by one of the exposed portions of the lens

48. Which one of the following properties is not general exhibited by ionic compounds?
 (a) Solubility in water
 (b) Electrical conductivity in solid state
 (c) High melting and boiling points
 (d) Electrical conductivity in molten state

Section C

Section- C consists of three Cases followed by questions. There are a total of 12 questions in this section. Attempt any 10 questions from this section.

The first attempted 10 questions would be evaluated

Case Based Questions: (49-52)

Metals are elements that exhibit a variety of physical properties such as those of malleability, ductility, conductivity of heat and electricity, lustre, etc. Due to such properties, metals find usage in purpose such as cooking utensils, machinery, modes of transportation, construction, etc., in our daily life. Metals such as gold and silver have been used in making jewellery since ancient times. Non-metals have been found to exist in all the three states— solid, liquid and gaseous. They are non-malleable, non-ductile and brittle in nature. Non-metals have very low tensile strength and

are easily broken up.

49. Which of the following metal(s) will have very low melting point?
 (a) Gallium (b) Caesium
 (c) Copper (d) Both (a) and (b)
50. The metal which is known as strategic metal is
 (a) zirconium (b) titanium
 (c) manganese (d) all of these

51. Metals can be given different shapes according to our needs because
- they are malleable and ductile
 - they are sonorous
 - they are generally hard
 - they have a shining surface

52. Which of the following non-metal is a good conductor of electricity?
- Oxygen
 - Nitrogen
 - Graphite
 - Bromine

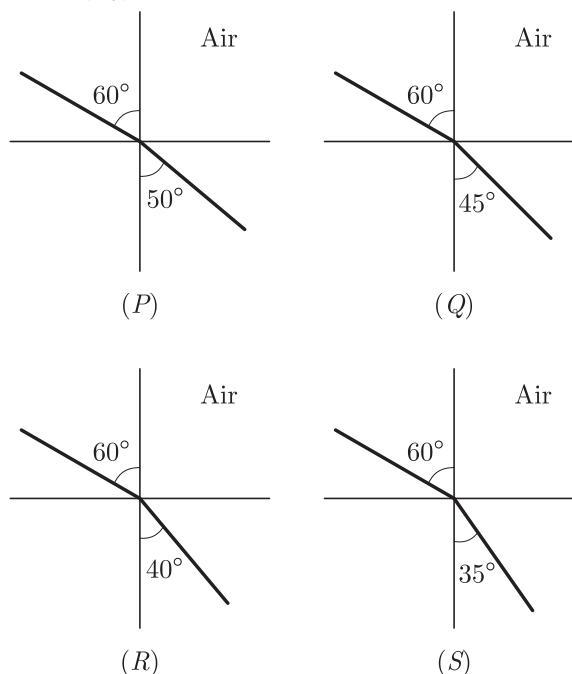
Case Based Questions: (53-56)

They create by-products that are not only useless for the cells of the body, but could even be harmful. These waste by-products are therefore needed to be removed from the body and discarded outside by a process called excretion. Again, if the basic rules for body design in multi-cellular organisms are followed, a specialised tissue for excretion will be developed, which means that the transportation system will need to transport waste away from cells to this excretory tissue.

53. The excretory materials are temporarily stored in:
- Urethra
 - Kidneys
 - Ureters
 - Urinary bladder
54. The main excretory by-product in human beings is
- Creatine
 - Urea
 - Uric acid
 - None of the above
55. The process of removal of nitrogenous waste materials from the body is called
- Nutrition
 - Respiration
 - Excretion
 - Transportation
56. Which is the main excretory organ in human beings?
- Intestine
 - Kidneys
 - Lungs
 - Heart

Case Based Questions: (57-60)

Mohan is performing an experiment with four different optical media, he traced the path of light in different media P, Q, R and S as below:



57. When a light ray travels from medium P to S it will:
- reflect back to medium P
 - pass straight without bending
 - bend away from normal
 - bend towards normal
58. Which of the following media has maximum optical density?
- P
 - R
 - S
 - Q
59. Through which media, will speed of light be maximum?
- Q
 - R
 - S
 - P
60. Absolute refractive index of medium is maximum in:
- P
 - Q
 - R
 - S

SAMPLE PAPER - 2 Answer Key

Paper Q. no.	Correct Option	Chapter no	Question Bank Q. no.
1	(d)	Ch-1	55
2	(c)	Ch-2	30
3	(d)	Ch-3	26
4	(d)	Ch-1	6
5	(d)	Ch-2	1
6	(a)	Ch-1	57
7	(d)	Ch-1	74
8	(a)	Ch-2	63
9	(a)	Ch-2	19
10	(c)	Ch-1	105
11	(d)	Ch-4	47
12	(c)	Ch-4	33
13	(a)	Ch-4	1
14	(d)	Ch-4	30
15	(a)	Ch-4	31
16	(a)	Ch-4	32
17	(d)	Ch-5	69
18	(d)	Ch-5	55
19	(b)	Ch-5	86
20	(a)	Ch-5	87
21	(d)	Ch-5	88
22	(b)	Ch-5	102
23	(d)	Ch-5	119
24	(c)	Ch-6	26
25	(b)	Ch-2	16
26	(c)	Ch-2	31
27	(c)	Ch-3	87
28	(b)	Ch-3	103
29	(c)	Ch-2	15
30	(b)	Ch-3	69
31	(a)	Ch-2	170

Paper Q. no.	Correct Option	Chapter no	Question Bank Q. no.
32	(b)	Ch-1	150
33	(d)	Ch-4	223
34	(d)	Ch-6	183
35	(c)	Ch-2	17
36	(a)	Ch-1	54
37	(a)	Ch-4	158
38	(b)	Ch-4	183
39	(a)	Ch-5	6
40	(a)	Ch-5	21
41	(b)	Ch-4	198
42	(a)	Ch-4	82
43	(a)	Ch-5	163
44	(a)	Ch-5	177
45	(a)	Ch-5	2
46	(a)	Ch-5	59
47	(b)	Ch-5	96
48	(b)	Ch-3	17
49	(d)	Ch-3	178
50	(d)	Ch-3	179
51	(a)	Ch-3	180
52	(c)	Ch-3	181
53	(d)	Ch-4	248
54	(b)	Ch-4	249
55	(c)	Ch-4	250
56	(b)	Ch-4	251
57	(d)	Ch-5	212
58	(c)	Ch-5	213
59	(d)	Ch-5	214
60	(d)	Ch-5	215