

Sample Paper

6

Time : 90 Minutes

Max. Marks : 40

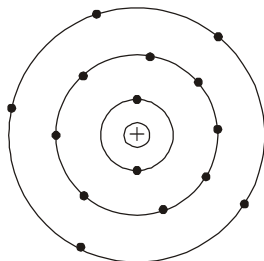
General Instructions

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.



Observe the number of electrons in each shell and guess the element.

- (a) Metal (b) Non-metal (c) Metalloid (d) Noble gas
2. A substance X is used to prepare white wash. On reaction with water it forms Y. X and Y are
(a) CaO, CaCO₃ (b) Ca(OH)₂, CaCO₃ (c) CaO, Ca(OH)₂ (d) CaSO₄, Ca(OH)₂
3. Which of the following compounds sodium bicarbonate does not react with
(a) Hydrochloric acid (b) Sulphuric acid (c) Phenol (d) Acetic acid

4.

	X	Y
(i)	2, 7	2, 1
(ii)	2, 8, 8, 1	2, 8, 7
(iii)	2, 8, 7	2, 8, 1
(iv)	2, 8, 2	2, 6, 0

XY will be ionic in case of

- (a) (ii) and (iii) (b) (ii) and (iv)
(c) (iii), (iii) and (iv) (d) All of these will be ionic.
5. Which of the following is not possible
(a) $\text{Fe} + \text{CuSO}_4 \rightarrow \text{FeSO}_4 + \text{Cu}$
(b) $\text{CuCl}_2 + \text{Pb} \rightarrow \text{PbCl}_2 + \text{Cu}$
(c) $\text{BaSO}_4 + 2\text{NaCl} \rightarrow \text{Na}_2\text{SO}_4 + \text{BaCl}_2$
(d) None of these.

12. Observe the given diagram and choose the correction sequence.

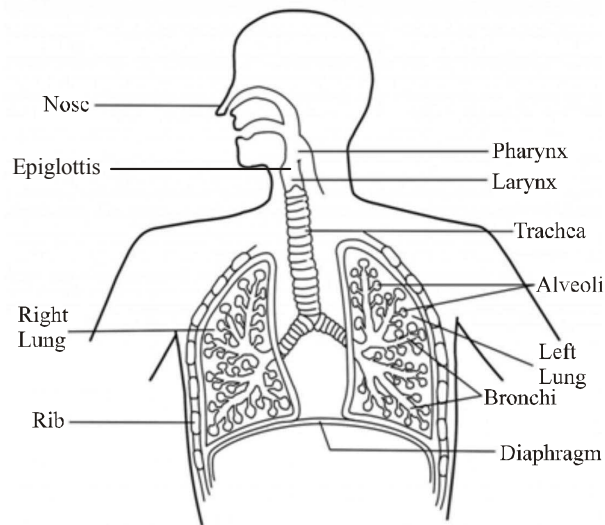
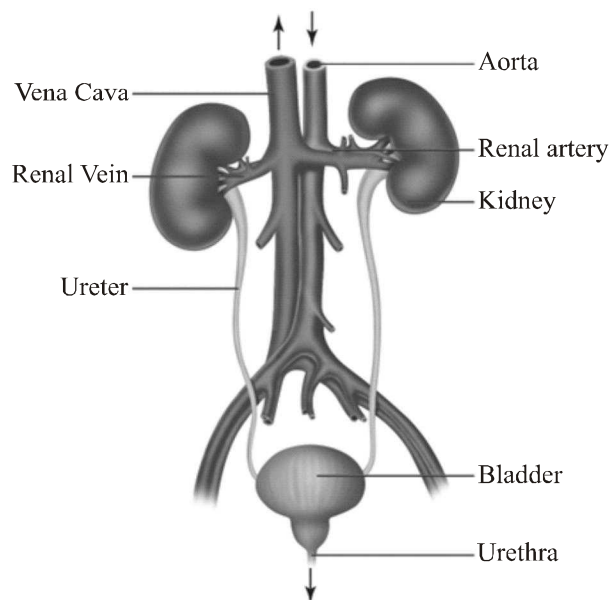


Fig. Human Respiratory System

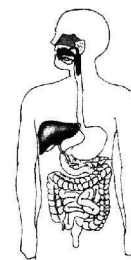
- (a) Pharynx – Common passage for food and air, Larynx – Sound production
 (b) Pharynx – Sound production, Larynx – Common passage for food and air
 (c) Pharynx – Carries air between larynx and the bronchi, Larynx – Provide large surface for gaseous exchange
 (d) None of them
13. Select the correct statement?
 (a) Heterotrophs do not synthesise their own food.
 (b) Heterotrophs utilise solar energy for photosynthesis.
 (c) Heterotrophs synthesise their own food.
 (d) Heterotrophs are capable of converting carbon dioxide and water into carbohydrates.
14. The given diagram shows the different organs of the urinary system. Identify the correct function of the organs.



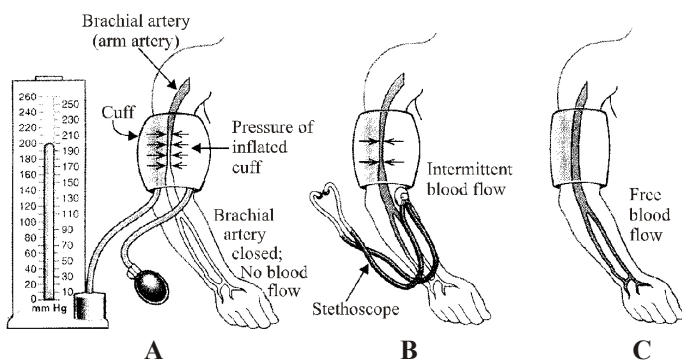
- (a) Kidney – Store the urine, Ureters – Carries urine from urinary bladder to the outside of the body
 (b) Kidney – Nitrogenous waste eliminate, Urethra – Carries urine from kidneys to the bladder
 (c) Kidney – Nitrogenous waste eliminate, Ureters – Carry urine from kidney to the bladder
 (d) None of the above

15. What does liver do to help digestion?

- (a) Makes important enzyme
- (b) Produce bile
- (c) Neutralise stomach acid
- (d) Regulates insulin

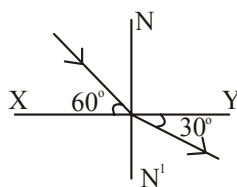


16. The following diagrams shows the measuring of blood pressure. Identify the correct sequence from Box I & II?



Box I	Box II
A	(i) Toppin sound first heard
B	(ii) No sound heard in stethoscope
C	(iii) Toppin sound just disappear

- (a) A – (i); B – (ii); C – (iii)
 - (b) A – (ii); B – (iii); C – (i)
 - (c) A – (ii); B – (i); C – (iii)
 - (d) A – (iii); B – (i); C – (ii)
17. A man used a convex lens of focal length of 20 cm in his specs, the power of this lens is:
- (a) +2D
 - (b) -2D
 - (c) +5D
 - (d) -5D
18. In case of a convex lens, what is the minimum distance between an object and its real image?
- (a) 2.5 times of focal length
 - (b) 2 times of focal length
 - (c) 4 times of focal length
 - (d) equal to focal length
19. In figure, a ray of light undergoes refraction from medium A to medium B. If the speed of light in medium A is v then the speed of light in medium B will be

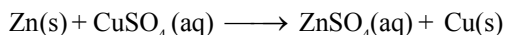


- (a) $\sqrt{3}v$
 - (b) $\frac{v}{\sqrt{3}}$
 - (c) $2v$
 - (d) $\frac{v}{2}$
20. Stars twinkle but planets do *not* twinkle because :
- (a) Stars emit their own light but planets receive light from the stars.
 - (b) Stars do not form a part of solar system.
 - (c) Stars form a point source of light while planets are considered as a collection of a large number of point sources of light.
 - (d) During refraction of star light from the atmosphere, star light bends more towards the normal as compared to the planets.
21. The minimum distance between an object and its real image in a convex lens is (f = focal length of the lens)
- (a) $2.5f$
 - (b) $2f$
 - (c) $4f$
 - (d) f
22. A concaved lens has focal length of 15 cm. At what distance should the object from the lens be placed so that it forms an erect and virtual image at 10 cm from the lens?
- (a) 30 cm
 - (b) 15 cm
 - (c) 60 cm
 - (d) 10 cm
23. A ray passing through which part of a lens emerges undeviated–
- (a) Focus
 - (b) Centre of curvature
 - (c) Optical centre
 - (d) between Focus and centre of curvature

Question No. 31 to 35 consist of two statements-Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

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

31. **Assertion :** In a reaction



Zn is a reductant but itself gets oxidized.

Reason : In a redox reaction, oxidant is reduced by accepting electrons and reductant is oxidized by losing electrons.

32. **Assertion:** Sodium hydrogencarbonate is also an ingredient in antacides

Reason: It is mild non corrosive basic salt and can neutralise acid present in stomach

33. **Assertion:** Chloroplast help in photosynthesis.

Reason: Mitochondria have enzymes for dark reaction.

34. **Assertion :** When a ray of light passes through a prism, it bends towards the thicker part of the prism.

Reason : An incident ray strikes a prism, undergoes refraction and comes out as an emergent ray.

35. **Assertion:** MgO has very high electrical conductivity.

Reason: It is an ionic compound.

36. The Excretory units of Annelids are:

- (a) Uniferous tubule (b) Flame cells (c) Nephridia (d) Malpighian tubule

37. An advantage of excreting nitrogenous wastes in the form of uric acid is that –

- (a) It is less toxic and reduces water loss and the subsequent need for water.
 (b) The formation of uric acid requires a great deal of energy.
 (c) Uric acid is the first metabolic breakdown products of acids.
 (d) Uric acid may be excreted through the lungs.

38. A column of water within xylem vessels of tall trees does not break under its weight because of:

- (a) Tensile strength of water (b) Lignification of xylem vessels
 (c) Positive root pressure (d) Dissolved sugars in water

39. An object of height 2.0 cm is placed on the principal axis of a concave mirror at a distance of 12 cm from the pole. If the image is inverted, real and 5 cm in height then location of the image and focal length of the mirror respectively are

- (a) (–30 cm, +8.6 cm) (b) (–30 cm, –8.6 cm)
 (c) (+30 cm, +8.6 cm) (d) (+30 cm, –8.6 cm)

40. A convex lens of focal length 20 cm is cut into two halves. Each of which is placed 0.5 mm and a point object placed at a distance of 30 cm from the lens as shown. Then the image is at

- (a) 60 cm (b) 30 cm (c) 70 cm (d) 50 cm

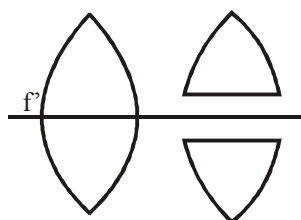
41. Which of the following process occur only in animals?

- (a) Respiration (b) Nutrition (c) Nervous control (d) Hormonal control

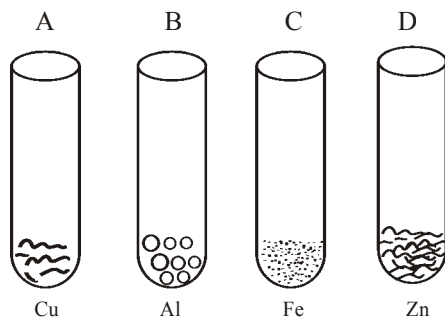
42. Adult human RBCs are enucleated. Which of the following statement(s) is / are most appropriate explanation for this feature?

- (1) They do not need to reproduce (2) They are somatic cells
 (3) They do not metabolise (4) All their internal space is available for oxygen transport
 (a) Only (1) (b) (1), (3) and (4)
 (c) (2) and (3) (d) Only (4)

43. A beam of light is incident at 60° to a plane separating two medium. The reflected and refracted rays are found to be perpendicular to each other. What is the refractive index of the second medium with respect to the first medium ?
- (a) $\frac{1}{\sqrt{3}}$ (b) $1/3$ (c) $\sqrt{3}$ (d) 3
44. Which of the following statements are true regarding scattering of light?
- I. Amount of scattering depends upon the wavelength of light.
 II. Tyndal effect is observed due to scattering of light
- (a) Only I is true (b) Only II is true
 (c) Both I and II is true (d) None is true
45. "Metal dishes" (Dish Antennas) are used for receiving TV signals from distant communication satellites. These 'Metal Dishes' are
- (a) Convex Reflectors (b) both convex and concave reflectors
 (c) Concave reflector (d) Convex refractors
46. If a symmetrical convex lens of focal length 'f' is cut into two parts along the principal axis as shown in the figure, the focal length of each part will be



- (a) $f/2$ (b) $f/4$ (c) f (d) ∞
47. The size of image formed by a concave mirror is same as the size of object. The position of the object will be
- (a) at F (b) between F and C (c) at C (d) between C and infinity
- 48.



If we added FeSO_4 to above four test tubes, in which test tube we observe no change?

- (a) "A" (b) "B" (c) "C" (d) "D"

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-I

pH is quite useful to us in a number of ways in daily life. Some of its applications are:

pH in our digestive system : our stomach produces HCl which is an acid and helps in digestion. Sometimes during indigestion stomach produces too much of acid then people used antacids to treat this problem.

pH of the soil : Plants need a specific pH range for proper growth. The soil may be acidic, basic or neutral depending upon the relative concentration of H^+ and OH^- . The pH of any soil can be determined by using pH paper. If the soil is too acidic, it can be corrected by adding lime to it. If the soil is too basic, it can be corrected by adding organic manure which contains acidic materials.

Regaining shine of a tarnished copper vessel by use of acids : A copper vessel gets tarnished due to formation of an oxide layer on its surface. On rubbing lemon on the vessel, the surface is cleaned and the vessel begins to shine again. This is due to the fact that copper oxide is basic in nature, which reacts with the acid (citric acid) present in lemon to form a salt (copper citrate) which is washed away with water. As a result, the layer of copper oxide is removed from the surface of the vessel and the shining surface is exposed.

