Directorate of Education, GNCT of Delhi
Mid Term Examination Practice Paper (Session: 2025-26)
Class:X; Subject: SCIENCE (086)

Maximum Marks: 80 **Duration: 3 hours**

General Instructions:
1. This question paper consists of 39 questions in 3 sections. Section A is Biology, Section B is Chemistry, and Section C is Physics.
2. All sections are compulsory. However internal choice is provided in some questions. A student is expected to attempt only one of these questions.

Section A		
Q.No.	**Question**	**Marks**
1.	Which process in plants is responsible for the transport of food? A. Photosynthesis B. Respiration C. Transpiration D. Translocation	**1**
2.	A person accidentally touches a hot object and withdraws his hand immediately. This is an example of: A. Involuntary action B. Hormonal action C. Voluntary action D. Reflex action	**1**
3.	Which of the following will have the least amount of energy in a food chain? A. Producers B. Secondary consumers C. Primary consumers D. Tertiary consumers	**1**
4.	The stomatal pore opens when A. The guard cells swell as water flows into them B. The guard cells shrink as water flows outside C. The guard cells swell as water flows outside D. The guard cells shrink as water flows into them	**1**
5.	The gustatory receptors and olfactory receptors in humans are present in A. skin and tongue respectively B. nasal cavity and eyes respectively C. tongue and nasal cavity respectively D.tongue and skin respectively	**1**
6.	Which portion of the brain is responsible for the precision of voluntary actions and maintaining the posture and balance of the body. A. Medulla B. Hypothalamus C. Cerebrum D. Cerebellum	**1**
7.	Which are the correct statements related with ecosystem?	**1**

	(i) Ecosystem consists of biotic and abiotic components. (ii) Garden and crop field are human-made ecosystems. (iii) Biotic components of ecosystem comprise of physical factors like wind, soil etc. (iv) Forest, ponds and lakes are artificial ecosystem. (v) The biotic and abiotic components of ecosystem interact with each other. A. (i), (ii), (v) B.(ii), (iv), (v) C. (i), (iii), (iv) D. (i), (iv), (v)	
8.	The following question consists of two statements- **Assertion (A)** and **Reason (R).** Answer these questions by selecting 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. **Assertion (A):**Ozone at higher levels of atmosphere is beneficial for organisms. **Reason (R):**Ozone shields the surface of earth from ultraviolet radiations from sun.	**1**
9.	The following question consists of two statements- **Assertion (A)** and **Reason (R).** Answer these questions by selecting 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. **Assertion (A):**Energy requirements of the autotrophic organisms are fulfilled by photosynthesis. **Reason (R):**Carbon dioxide is oxidised to form carbohydrates.	**1**
10.	How the positive geotropism is different from negative geotropism? Explain with the help of suitable examples.	**2**
11.	*Attempt either option A or B.* **A.** Describe how Amoeba obtains its food and digests it. Which type of nutrition is exhibited by it? **OR** B. Name any two digestive enzymes present in pancreatic juices and mention their important function.	**2**
12.	"The flow of energy in unidirectional in a food chain".Justify the statement with the help of a terrestrial food chain comprising four trophic levels.	**2**
13.	What are plant hormones? Name the plant hormone responsible for the following: (i)inhibition of growth (ii) growth of stem (iii) promotion of cell division	**3**

	(iv) growth of tendril around a support	
14.	**A.** Describe two metabolic pathways through which glucose is broken down in the human body in different situations to release energy, and specify the end products of each pathway. **B.** How the mode of transport of oxygen is different from the transport of carbon dioxide in our body?	**3**
15.	During science class, the students learned the significance of feedback mechanisms in endocrine system. *Attempt either subpart A or B.* A. What is the importance of feedback mechanism of hormonal action in animals **OR** B. How the hormonal mechanism of control and coordination in animals are different from nervous control? C. Name the hormone released by pancreas when the sugar levels in blood rises. D. Name a hormone secreted by adrenal gland and state its important function.	**4**
16.	*Attempt either option A or B.* A. (i) Describe the pathway of oxygenated blood circulation in the human body. (ii) Describe two important functions of lymph in humans. **OR** B. Give reasons for the following: (i) Veins are provided with valves whereas arteries lack it. (ii) The septum separates right side and left side of heart. (iii) Fishes have two chambered heart. (iv) Wall of arteries are thick and elastic. (v) A blood clot develops at the site of injury after some time.	**5**
	Section B	
17.	A student in laboratory uses a universal indicator and note that solution shows the pH value of 3. What does it indicate? A. The solution is neutral B. The solution is strongly basic C. The solution is strongly acidic D. The solution is weakly basic.	**1**
18.	On heating lead nitrate in a test tube, emission of brown fumes are of: A. Lead oxide B. Nitrogen dioxide C. Oxygen D. Carbon dioxide	**1**
19.	Basic salts are formed when A. Strong acid reacts with weak base B. Strong acid reacts with strong base C. Weak acid reacts with weak base D. Weak acid reacts with strong base	**1**

20.	Which of these metals does not reacts either with cold or hot water but reacts with steam? A. Potassium and sodium B. Iron and aluminium C. Silver and gold D. Lead and copper	**1**
21.	Metal hydrogen carbonates reacts with acids to produce A. Corresponding salt, hydrogen gas and water B. Metal carbonates and carbon dioxide gas C. Corresponding salt, carbon dioxide and water D. Metal carbonates and oxygen gas	**1**
22.	The following question consists of two statements- **Assertion (A)** and **Reason (R).** Answer these questions by selecting 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 **Assertion (A):**A yellow precipitate is formed when solutions of lead(II) nitrate and potassium iodide are mixed. **Reason (R):**Lead(II) iodide is insoluble in water and form precipitates.	**1**
23.	Write balanced chemical equation for the reaction involved in the preparation of bleaching powder. State any one use also.	**2**
24.	A student placed a copper wire in iron sulphate solution and observed no colour change even after an hour. Explain the reason behind this observation.	**2**
25.	A student in the science lab diluted a solution of hydrochloric acid with water under supervision of science teacher. A. How will it affect the hydrogen ion concentration and pH? B. Why does the acid become less corrosive upon dilution? C. Explain the safe procedure that must be followed by the student while diluting a strong concentrated acid ?	**3**
26.	*Attempt either option A or B.* A. (i) Differentiate between roasting and calcination. (ii) Draw a flow chart representing various steps involved in the extraction of metal of low reactivity from its ore. **OR** B. A technician uses the thermit reaction to repair a broken steel joint in a machine. (i) Explain how this reaction helps in joining metal parts. (ii) Write equation for the chemical reaction involved. (iii) Why is aluminium preferred over zinc or copper in this case?	**3**

27.	In an experiment, black copper(II) oxide (CuO) is heated while hydrogen gas is passed over it. A reddish-brown solid (copper) forms, and water vapours condense on the cooler part of the test tube. *Attempt either subpart A or B.* A. Write balanced chemical equation for the reaction. **OR** B. Why is this reaction considered as redox reaction? C. Identify the substance acting as oxidising agent and reducing agent. D. Identify the substances being oxidised and reduced during this reaction.	**4**
28.	*Attempt either option A or B.* A. (i)Explain the formation of lithium oxide (Li_2O) with the help of electron dot structure. (ii) Why ionic compounds conduct electricity in molten or aqueous state but not in solid state? **OR** B. (i) Why is aluminium oxide considered an amphoteric oxide? Explain with examples. (ii) Why hydrogen gas is not evolved when a metal reacts with nitric acid? (iii) Define alloy. Name alloy and its constituents commonly used during welding of electrical wires.	**5**
	Section C	
29.	When a narrow beam of white light is passes through a glass prism, it splits into its component colours. This phenomenon is called A. Tyndall effect B. Dispersion of light C. Total reflection of light D. Reflection of light	**1**
30.	A concave mirror forms an enlarged and virtual image when the object is placed: A. At infinity B. Beyond centre of curvature C. Between pole and focus D. At centre of curvature	**1**
31.	Which colour of light is scattered the least in the atmosphere? A. Blue B. Red C. Violet D. Green	**1**
32.	A concave lens has a focal length of 50 cm. Its power will be A. +2 D B. -2 D C. +0.5 D D. -0.5 D	**1**

33.	The following question consists of two statements- **Assertion (A)** and **Reason (R).** Answer these questions by selecting 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 **Assertion (A):** The ability of the eye to focus on both near and distant objects, by adjusting its focal length, is called the accommodation. **Reason (R):**Cornea in eyes helps in adjusting its focal length.	**1**
34.	*Attempt either option A or B.* A.If Earth's atmosphere had a uniform density, how would it affect the twinkling of stars? Explain. **OR** B.Draw a ray diagram to show the rainbow formation and label the point: (i) where dispersion of light takes place. (ii) where total internal refraction occurs.	**2**
35.	A. If the refractive index of a glass slab is increased, how does it affect the speed of light in the slab? B. Determine the speed of light in medium X if the refractive index of X with respect to vacuum is 1.90. (Speed of light in vacuum is 3×10^8 m/s).	**3**
36.	Describe the important function of following parts of human eye: (i) Iris (ii) Ciliary muscle (iii) Retina	**3**
37.	An object is placed 40 cm from a convex lens and the image is formed 20 cm on the other side of the lens. Calculate the focal length of the lens, nature of image and magnification.	**3**
38.	Nisha, after her class room discussion understands that in some refractive defects of vision, the image is formed either in front of or behind the retina. She wants to understand how the use of appropriate lenses can help to overcome these problems. A. In which defect of the vision, the image is formed behind the retina? Name the corrective lens used for correction. B. Enlist two causes that may result in the defect of vision where the image is formed in front of the retina. *Attempt either subpart C or D.* C. Draw ray diagram showing: (i) a myopic eye and (ii) its correction using appropriate lens. **OR** D. In elderly people, the power of eyes to see nearby and distant objects diminishes. (i) Name the defect of vision that is likely to develop in such situations and which lens is used for correction of this defect.	**4**

	(ii) Explain the reason for this defect.	
39.	*Attempt either option A or B.* A. An object of 5cm in height is placed at 10 cm in front of concave mirror of focal length 15 cm. (i) Find the position, nature and size of image using mirror formula. (ii) Why concave mirror is preferred in searchlight and headlights of vehicles? **OR** B. (i) Draw a labelled ray diagram for the image formation by a convex mirror when the object is placed between infinity and the pole of the mirror and describe the position, size and nature of image formed. (ii) List any two applications of convex mirror.	**5**