

AIRPORT SENIOR SECONDARY SCHOOL
TERMINAL EXAMINATION 1(2022-23)
SCIENCE

CLASS X

TOTAL MARKS: 80
TIME : 3 hours

General Instructions:

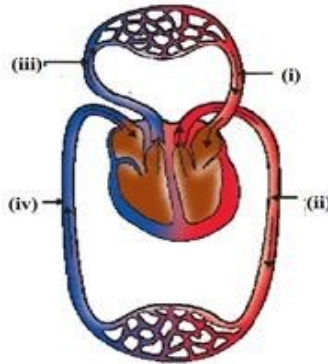
- *This question paper consists of 39 questions in 5 sections.*
- *All questions are compulsory.*
- *Section A consists of 20 objective type questions carrying 1 mark each.*
- *Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.*
- *Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.*
- *Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.*
- *Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.*

SECTION A

Select and write one most appropriate option out of the four options given for each of the questions 1 - 20

- 1) The laws of reflection hold true for:
a) plane mirrors only b) concave mirrors only
c) convex mirrors only d) reflecting surfaces
- 2) When an object is kept within the focus of a concave mirror, an enlarged image is formed behind the mirror. This image is:
a) real
b) inverted
c) virtual and inverted
d) virtual and erect
- 3) A real image is formed by the light rays after reflection or refraction when they:
a) actually meet or intersect with each other.
b) actually converge at a point.
c) appear to meet when they are produced in the backward direction.
d) appear to diverge from a point.
Which of the above statements are correct?
a) (A) and (D) b) (B) and (D)
c) (A) and (B) d) (B) and (C)
- 4) Consider the following properties of virtual images:
A) cannot be projected on the screen
B) are formed by both concave and convex lens
C) are always erect
D) are always inverted
The correct properties are:
a) (A) and (D) b) (A) and (B)
c) (A), (B) and (C) d) (A), (B) and (D)

- 5) To astronauts sky on the moon appears dark because:
- There is no light on the moon
 - There is no atmosphere on the surface of the moon
 - Moon is a non-luminous object
 - The surface of the moon absorbs all the sunlight
- 6) The phenomena of light involved in the formation of a rainbow are:
- Reflection, refraction, dispersion
 - Refraction, dispersion, internal reflection
 - Refraction, dispersion, scattering
 - Dispersion, scattering, internal reflection
- 7) In which of the following groups of organisms, blood flows through the heart only once during one cycle of passage through the body?
- Rabbit, Parrot, Turtle
 - Frog, crocodile, Pigeon
 - Whale, Labeo, Penguin
 - Shark,, dog fish, sting ray
- 8) The figure given below shows a schematic plan of blood circulation in humans with labels (i) to (iv). Identify the correct label with its functions?
- Pulmonary vein - takes impure blood from body part.
 - Pulmonary artery - takes blood from lung to heart.
 - Aorta - takes blood from heart to body parts.
 - Vena cava takes - blood from body parts to right auricle.



- 9) Which of the following statement(s) is (are) correct?
- Pyruvate can be converted into ethanol and carbon dioxide by yeast
 - Fermentation takes place in aerobic bacteria
 - Fermentation takes place in mitochondria
 - Fermentation is a form of anaerobic respiration
- 10) Choose the forms in which most plants absorb nitrogen
- Proteins
 - Nitrates and Nitrites.
 - Urea.
 - Atmospheric nitrogen
- a) (i) and (ii) b) (ii) and (iii) (c) iii) and (iv) d) (i) and (iv)
- 11) Choose the correct path of urine in our body
- kidney →ureter→ urinary bladder →urethra
 - kidney →urinary bladder→urethra →ureter
 - kidney→ureter→ urinary bladder→urethra
 - urinary bladder →kidney →ureter →urethra

- 12) During deficiency of oxygen in tissues of human beings, pyruvic acid is converted into lactic acid in the
- cytoplasm
 - chloroplast
 - mitochondria
 - golgi body
- 13) Anita added a drop each of diluted acetic acid and diluted hydrochloric acid on pH paper and compared the colors. Which of the following is the correct conclusion?
- pH of acetic acid is more than that of hydrochloric acid.
 - pH of acetic acid is less than that of hydrochloric acid.
 - Acetic acid dissociates completely in aqueous solution.
 - Acetic acid is a strong acid.
- 14) In the redox reaction
- $$\text{MnO}_2 + 4\text{HCl} \rightarrow \text{MnCl}_2 + 2\text{H}_2\text{O} + \text{Cl}_2$$
- MnO_2 is reduced to MnCl_2 & HCl is oxidized to H_2O
 - MnO_2 is reduced to MnCl_2 & HCl is oxidized to Cl_2
 - MnO_2 is oxidized to MnCl_2 & HCl is reduced to Cl_2
 - MnO_2 is oxidized to MnCl_2 & HCl is reduced to H_2O
- 15) The correct order of acidic strength is:
- Water < Hydrochloric acid < acetic acid
 - Hydrochloric acid < Water < acetic acid
 - Acetic acid < Hydrochloric acid < Water
 - Water < Acetic acid < Hydrochloric acid
- 16) Which of the following is used for dissolution of gold?
- Hydrochloric acid
 - Sulphuric acid
 - Nitric acid
 - Aqua regia

Q. no 17 to 20 are Assertion - Reasoning based questions.

These questions consist of two statements - Assertion (A) and Reason (R). Answer these questions selecting the appropriate option given below:

- Both A and R are true and R is the correct explanation of A
- Both A and R are true and R is not the correct explanation of A
- A is true but R is false
- A is False but R is true

- 17) Assertion: Sky appears blue in the day time.
Reason: White light is composed of seven colours.
- 18) Assertion: Amphibians can tolerate mixing of oxygenated and deoxygenated blood.
Reason: Amphibians are animals with two chambered heart.
- 19) Assertion: A receptor is a specialized group of cells in a sense organ that perceive a particular type of stimulus.
Reason : Different sense organs have different receptors for detecting stimuli.
- 20) Assertion : Hydrogen gas is not evolved when a metal reacts with nitric acid.
Reason : Nitric acid is a strong oxidising agent.

SECTION B

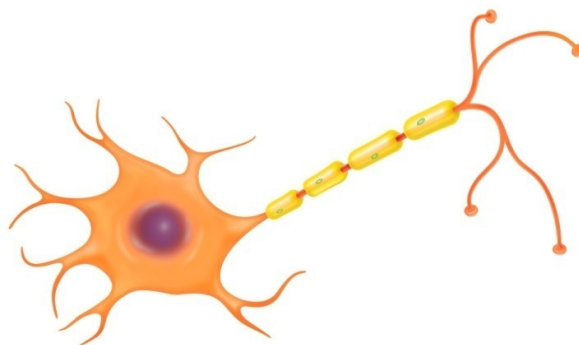
Q. no. 21 to 26 are very short answer questions.

- 21) How will you use two identical prisms so that a narrow beam of white light incident on one prism emerges out of the second prism as white light? Draw the diagram
- 22) List the symptoms and causes of acromegaly and cretinism
- 23) Differentiate between parasitic and saprotrophic mode of nutrition.
- 24) Which of the following samples :
tap water, sodium hydroxide solution, distilled water, ethanoic acid solution
will give reddish pink colour when tested with P^H paper strips.
- 25) Take 2 g silver chloride in a china dish and place it in sunlight.
 - a) Observe the colour of silver chloride after sometime.
 - b) What type of reaction takes place?
 - c) Write the chemical reaction for the above observation.
- 26) Write balanced chemical equations for the following reactions
 - a) Hydrogen sulphide gas burns in air to give water and sulphur dioxide.
 - b) Barium chloride in aqueous solution reacts with zinc sulphate to give zinc chloride and barium sulphate.

SECTION C

Q.no. 27 to 33 are short answer questions

- 27) An object is placed at a distance of 12 cm in front of a concave mirror. It forms a real image four times larger than the object. Calculate the distance of the image from the mirror.
- 28) Draw a ray diagram to represent the nature, position and size of the image formed by a convex lens for the object placed at
 - a) infinity b) Between F, and optical centre (O)
- 29) Find the position, nature and size of the image formed by a convex lens of focal length 12 cm of an object 5 cm high placed at a distance 20 cm from it
- 30) What is a reflex arc and reflex action? With the help of a neat and well labelled diagram. Explain the different steps involved in a reflex arc.
- 31) a) Label a, b



- (i) Name the parts labelled a and b in the neuron drawn above.
 - (ii) Which part acquires the information in the neuron?
 - (iii) Through which part does the information travel?
 - (iv) In what form does this information travel?
 - (v) Where is the impulse converted into a chemical signal for onward transmission?
- b) Distinguish between acromegaly and cretinism.

- 32) (a) Show the formation of Na_2O by transfer of electrons between the constituting atoms.
(b) Why are ionic compounds usually hard?
(c) How is that ionic compounds in the solid state do not conduct electricity and they do so in the molten state?
- 33) A white powder is added while baking breads and cakes to make them soft and fluffy. Write the name of the powder. Name its main ingredients. Explain the function of each ingredient. Write the chemical reaction taking place when the powder is heated during baking.

SECTION D

Q.no. 34 to 36 are long answer questions.

- 34) a) A student is unable to see clearly the words written on the blackboard placed at a distance of approximately 3 m from him. Name the defect of vision the boy is suffering from. State the possible causes of this defect and explain the method of correcting it.
b) An old person is unable to see clearly nearby object as well as distant objects, (i) What defect of vision is he suffering from? (ii) What kind of lens will be required to see clearly the nearby as well as distant objects?
- 35) a) With the help of well labelled neat diagrams explain the various steps involved nutrition in Amoeba.
b) Distinguish between Pepsin and Trypsin.
- 36) a) Describe the steps involved in the extraction of zinc from its sulphide and carbonate ores.
b) Support your answer with balanced chemical equation for the chemical reactions involved in the process.

SECTION E

Q.no. 37 to 39 are case - based/data -based questions with 2 or more short sub - parts.

- 37) In a specialized slide projector, slides are small transparencies mounted in sturdy frames ideally suited to magnification and projection, since they have a very high image quality. There is a tray where the slides are to be put into a particular orientation so that the viewers can see the enlarged erect images of the transparent slides. This means that the slides will have to be inserted upside down in the projector tray. To show her students the images of insects that she investigated in the lab, Mrs. Iyer brought a slide projector. Her slide projector produced a 500 times enlarged and inverted image of a slide on a screen 10 m away.
- a) Based on the text and data given in the above paragraph, what kind of lens must the slide projector have?
b) If v is the symbol used for image distance and u for object distance then what will be the sign for v/u in the given case?
c) A slide projector has a lens with a focal length of 20 cm. The slide is placed upside down 21 cm from the lens. How far away should the screen be placed from the slide projector's lens so that the slide is focused?
- 38) The control and coordination in plants is done by plant hormones. The plant hormones coordinate the activities of the plant by controlling one or the other aspect of the growth of the plant. So, the plant hormones are also known as plant growth substances. The growth of a plant can be divided into three stages cell division, cell enlargement and cell differentiation (or cell specialisation), and these stages have particular locations in a plant. These three stages of plant growth as well as promotion of dormancy, breaking of dormancy, stomata control, falling of leaves, fruit growth, ripening of fruits and ageing in plants are controlled by the various plant hormones.

Q1. By which hormone the control and coordination of plants done?

- (1) Photohormones
- (2) Phytohormones

Q2. Which hormone promotes cell division?

- (1) Auxins
- (2) Gibberellins
- (3) Cytokinins
- (4) Abscisic acid

Q3. Which hormone promotes cell the dormancy in seeds and buds?

- (1) Auxins
- (2) Gibberellins
- (3) Cytokinins
- (4) Abscisic acid

Q4. Do Cytokinins delay the ageing of leaves?

- (1) Yes
- (2) No

Q5. Which hormone promotes the wilting and falling of leaves?

- (1) Auxins
- (2) Gibberellins
- (3) Cytokinins
- (4) Abscisic acid

39) Read the passage carefully and answer the following questions from (i) to (iv):

Reshma broke her leg in an accident. She went to see Dr.SantPrakash. On examination, Dr.Prakash mixed the white power in water and applied to her leg along with the cotton and gauze. After a while, it turned into white, solid, hard mass. He said that it would support her fractured bone in the right position.

(i) After treatment, the doctor repacked the white powder back into moisture proof, airtight container. Why?

- (a) The fungus growth will occur in open.
- (b) The powder would react to moisture and turn into solid mass.
- (c) The powder with react to sunlight and turn into solid mass.
- (d) To prevent the stealing of the powder as it is very expensive.

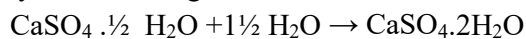
(ii) What is 'white, solid hard mass' called as?

- (a) Talcum powder
- (b) Plaster of Paris
- (c) Paris of Plaster
- (d) Copper sulphate

(iii) The reaction involved in the formation of white mass is:

- (a) Combustion
- (b) Mineralisation
- (c) Oxidation
- (d) Crystallisation

(iv) Study the following reaction and choose the correct option:



- (a) Reactant is calcium hemihydrate, product is gypsum.
- (b) Reactant is gypsum, product is calcium hemihydrate.
- (c) Reactant is gypsum, product is calcium sulphate hemihydrate.
- (d) Reactant is calcium sulphate hemihydrate, product is gypsum
