KENDRIYA VIDYALAYA SANGATHAN AGRA REGION

PREBOARD 3 (2025-26) – Set-1

Class – 10 Subject – Science (086)

M.M. – 80 **Time allowed – 3 hours**

General Instructions :

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(i) This question paper consists of 39 questions in 3 sections.Section A is Biology, Section, B is Chemistry and Section C is Physics.

(ii) All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.

SECTION A

1.	(a) The site of photosynthesis in plant cells is: (b) a) Mitochondria (c) b) Ribosome (d) c) Chloroplast (e) d) Vacuole	1
2.	Humans have two different sex chromosomes, X and Y. Based on Mendel's laws, a male offspring will inherit which combination of chromosomes? (a) Both the X chromosomes from one of its parents (b) Both the Y chromosomes from one of its parents (c) A combination of X chromosomes from either of its parents (d) A combination of X and Y chromosomes from either of its parents	1
3.	(a) Which hormone regulates blood sugar level? (b) a) Thyroxine (c) b) Insulin (d) c) Adrenaline (e) d) Growth hormone	1
4.	Exchange of genetic material takes place in. (a) Vegetative reproduction (b) Asexual reproduction (c) Sexual reproduction (d) Budding	1
5.	Organisms of a higher trophic level which feed on several types of organisms belonging to a lower trophic level constitute the (a) food web (b) ecological pyramid (c) ecosystem (d) food chain	1

6.	The process by which blood is cleared of metabolic wastes in case of kidney failure is called: (a) artificial kidney (b) dialysis (c) transplantation (d) filtration	1
7.	Which of the following in the cells contain information for inheritance of features from parents to next generation in the form of DNA molecules. (a) Ribosome (b) Nucleus (c) Chromosomes (d) Vacuoles	1
Q 8and 9 are Assertion Reason q. a) Both A and R are true and R is the correct explanation b) Both A and R are true but R is not the correct explanation c) A is true but R is false A. d) A is false but R is true true.		
8.	**Assertion (A):** The sex of a child is determined by the mother. **Reason (R) :** Humans have two types of sex chromosomes: XX and XY.	1
9.	**Assertion:** Aquarium needs regular cleaning **Reason:** There are no microbes to clean water in aquarium; therefore, it needs to be regularly cleaned	1
10.	A student observes a culture of Amoeba under the microscope and finds that each cell divides to form two similar daughter cells. a. Name this mode of reproduction. b..Draw suitable daigram	2
11.	What is double circulation? Why is it important in humans? Or Why does the breathing rate of aquatic organisms is higher than terrestrial organisms	2
12.	What is meant by 10% law of energy transfer?give examples	2
13.	a)What is meant by contraception? b) State any three methods of contraception C) State any two reasons for adopting contraceptive methods.	3
14.	Ravi observed that during vigorous exercise, his breathing rate increased. His teacher explained that the body needs more energy during exercise. a) Name the process that releases energy in the body. b) Which gas is required for this process? c) Name the organ involved in gaseous exchange in humans. d) Why does breathing rate increase during exercise?	3

15.	A tall pea plant was crossed with a dwarf pea plant. In the first generation, all plants were tall. a) Which trait is dominant? b) Name the scientist who performed this experiment. c) Name the generation obtained after crossing parent plants. d) What are the percentage of tall and dwarf plant in F2.	4
16.	1(a).Define andWrite one example each of the following tropic movements : (i) Positive phototropism and Negative geotropism (ii) Chemotropism. (iii) Geotropism (iv) thigmotropism. (b) Name the hormone which helps plant tendrils to roll over the support. or (a) What is reflex action? Draw reflex arc. (b) How brain and spinal cord are protected in human ? (c) Name the master gland present in the brain. (d) Draw a neuron.	5

SECTION B

17.	The pH value of a neutral solution is: a) 0 b) 7 c) 10 d) 14	1
18.	Ethene belongs to which homologous series? a) Alkanes b) Alkenes c) Alkynes (A) d) Alcohols	1
19.	Which of the following is an example of an endothermic reaction? a) Combustion of methane b) Photosynthesis	1

	c) Respiration d) Burning of coal	

20.	(a) The chemical formula of washing soda is: (b) a) $NaHCO_3$ (c) b) $Na_2CO_3 \cdot 10H_2O$ (d) c) Na_2CO_3 (e) d) $CaCO_3$
21.	A student studies that a soap molecule has two ends, one of which is an ionic end, and the other is the carbonic chain. Which option explains the interaction of a soap molecule with oil? (a) Ionic end of the soap interacts with the oil (b) The closest end of the soap interacts with the oil (c) Carbonic chain end of the soap interacts with the oil (d) Ends of the soap randomly interact with the oil
22.	Corrosion of iron is commonly known as: a) Tarnishing b) Galvanisation c) Rusting (a) d) Oxidation
23.	(a) Which gas is released when zinc reacts with dilute hydrochloric acid? (b) a) Oxygen (c) b) Carbon dioxide (d) c) Hydrogen (e) d) Nitrogen

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

24.	**Assertion (A) :** When HCl is added to zinc granules, a chemical reaction occurs. **Reason (R) :** Evolution of a gas and change in colour indicate that the chemical reaction is taking place. a) Both A and R are true and R is the correct explanation b) Both A and R are true but R is not the correct explanation c) A is true but R is false D) A is false but R is true	

25.	Write the chemical formula and two uses of baking soda.	2
26.	a) What are soaps and detergents? b) Write one difference between them. c) Explain the cleansing action of soap with a labelled diagram	3
27.	.A) Iron articles are often coated with zinc to prevent rusting. a) Name this process. b)Which metal is more reactive – iron or zinc? c) Name one property of metals **OR** (B. (i) Compound X and aluminium are used to join railway tracks. Identify the compound X . Name the reaction . Write down its reaction. (ii) 24 Carat gold is not suitable for making jewellery. Why?	3
28.	student tested three solutions A, B and C using pH paper. Solution A turned blue litmus red, solution B turned red litmus blue and solution C showed no change. a) Which solution is acidic? b) Which solution is basic? c) What is the nature of solution C? d) Name one natural indicator.	4
29.	A. Give reason for the following: (i) Hydrogen gas is not evolved when most of the metals react with nitric acid. (ii) Zinc oxide is considered as an amphoteric oxide. (iii) Metals conduct electricity. (iv) why sodium is highly reactive and not found in free state in nature. (v) Why gold is used for making jewellery? Or B. Name a metal which: (a) Has a very low melting point. (b) is most ductile. (c) Which metal is stored under kerosene oil? (d) Name the hardest non-metal. (e) Which metal is used for making electric wires?	5

SECTION C

30.	The danger signals installed at the top of tall buildings are red in colour.because red colour.. (a) is scattered the most by smoke or fog (b) is scattered the least by smoke or fog (c) is absorbed the most by smoke or fog (d) moves fastest in the air
31.	(a) The unit of electric current is: (b) a) Volt (c) b) Ampere (d) c) Ohm (e) d) Coulomb

32.Assertion (A): Increasing the number of turns in a coil increases the strength of the magnetic field.
Reason (R): Each turn of the coil contributes to the magnetic field.
a) Both A and R are true and R is the correct explanation
b) Both A and R are true but R is not the correct explanation
c) A is true but R is false
A. d) A is false but R is true

33.	a)What is uses of electric fuse? b) Define electric power. Write its SI unit.
34.	State Ohm's law.
35.	A student cannot see distant objects clearly but can see nearby objects properly. a) Name the defect of vision. (a) b) Which type of lens is used to correct it?
36.	a)Write laws of reflection b)Write any two uses of concave mirror and convex mirror.

37.	Three resistors of 5 Ω, 10 Ω and 15 Ω are connected in series and the combination is connected to battery of 30 V. Ammeter and Voltmeter are connected in the circuit. a. Draw a circuit diagram to connect all the devices in proper correct order. b. What is the current flowing and potential difference across 10 Ω resistance? Or What is resistance? Name two factors on which resistance depends. b) State one advantage of parallel connection over sereis.	3
38.	student passes a beam of white light through a triangular glass prism and observes a band of seven colours on a screen. Questions: a) Name the phenomenon observed. b) Which colour deviates the least in a prism? c) Arrange the colours in order of increasing wavelength. d) What is the band of colours called?	4
39.	Explain the following a. What is a solenoid? How does it behave like a magnet? b. Differentiate between electromagnet and permanent magnet (any two points). c. What happens to the magnetic field when current through a conductor increases? Or a)Draw the pattern of magnetic field lines around a current-carrying circular loop. b) What is electromagnet? C)What happens to the strength of electromagnet if number of turns is increased? d) Name one application of electromagnets.	5