



SHAH CLASSES[®]

CULTIVATING SUCCESS SINCE 1998

Subject : Science & Technology-II

Marks : 40

Class : X

Prelim Answer Paper - 1

Q.1 : A) Multiple Choice Questions. 5

1. Classification proposed by Aristotle is known as '.....'.

Ans : d) Artificial method

2. Alcoholic person lacks the thinking.

Ans : b) rational

3. Factor disturbing the mental health is/ are

Ans : d) All of the above

4. Which plant is used as biofertilizer ?

Ans : d) Azolla

5. _____ acid is used in the production of vitamins.

Ans : c) Lactic

B) Answer the following questions. 5

1. Find co-related terms

Pedicle present : pedicellate flower : :
Pedicle absent :

Ans : Pedicle present : pedicellate flower : :
Pedicle absent : Sessile flower

2. Find the odd one out.

Actin, Ossein, Myosin, Aldosterone

Ans : Aldosterone. Aldosterone is a hormone, rest all are proteins.

3. Match the pair.

Column "A"	Column "B"
i. Birds	a. Invertebrates
ii. Deep sea fishes	b. Aves
	c. Cro Magnon
	d. Pisces

Ans :

Column "A"	Column "B"
i. Birds	b. Aves
ii. Deep sea fishes	d. Pisces

4. State true or false.

Cilia push the oocyte towards the uterus.

Ans : True.

5. Name the following.

Name any two conventional sources of energy.

Ans : Coal, Natural Gas

Q.2 : A) Give scientific reason. (Any two) 4

1. Environmental pollution has become a cause for concern.

Ans : i) Contamination of any material is called pollution.

ii) Human activities have led to unnecessary and unacceptable changes in the surroundings, and this has led to environmental pollution.

iii) Various reasons are responsible for tremendous increase in environmental pollution in recent years like – population explosion, fast industrialization, indiscriminate use of natural resources, deforestation, and unplanned urbanization.

iv) This has led to direct or indirect changes in physical, chemical, and biological properties of air, water, and soil which will be harmful to humans and other living beings.

Hence, environmental pollution has become

a cause for concern

2. **It is difficult to clean a pond filled with algae like spirogyra and maintain it in the same state for a long time.**

Ans : i) A Spirogyra is a filamentous aquatic alga.
 ii) When water, sunlight, and nutrients are available, the Spirogyra grows and multiplies rapidly.
 iii) Some filaments undergo fragmentation resulting in numerous smaller pieces.

3. **Oral rehydration solution (salt-sugar-water) is given frequently to persons experiencing loose motions.**

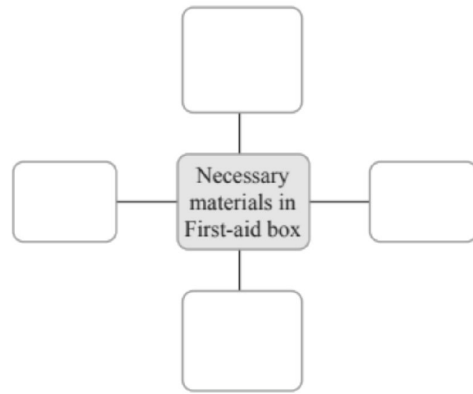
Ans : i) When a person experiences loose motions, he/she loses a lot of water from the body, which leads to dehydration.
 ii) The oral rehydration solution (salt-sugar-water) replaces the fluids and essential salts lost from our body during loose motions, and thus prevents dehydration.
 iii) The sugar (glucose) contained in oral rehydration solution helps the intestines to absorb the fluids and salts more efficiently. Hence, oral rehydration solution (salt-sugar-water) is given frequently to persons experiencing loose motions.

B) Answer the following questions. (Any three) 6

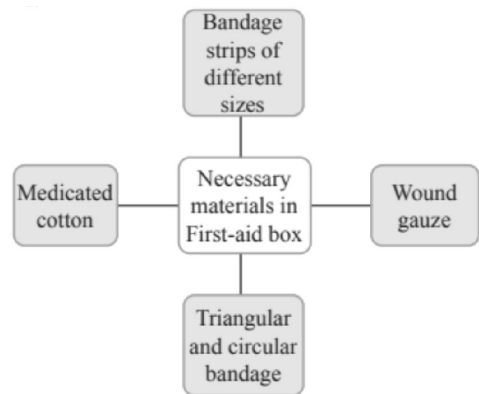
1. **Write the objections raised against Darwin's theory of natural selection.**

Ans : i) Darwin suggested that organisms compete with each other during their lifetime and all those with winning characteristics, survive and the others perish. In this process, nature selects the organisms that are fit to survive.
 ii) Objections were raised against this theory because:
 a) Natural selection is not the only factor responsible for evolution.
 b) Darwin did not provide any explanation about useful and useless modifications.
 c) There was no explanation about slow and abrupt changes.

2. **Complete the following chart.**



Ans :



3. **Distinguish between Butterfly [Animals in phylum Arthropoda-butterfly] and Bat [Class-Mammalia: Bat]**

Ans :

	Butterfly	Bat
i.	It has jointed appendages.	It does not have jointed appendages.
ii.	Mammary glands are absent.	It shows presence of mammary glands.
iii.	The young stage is caterpillar which metamorphse into an adult butterfly.	No metamorphosis take place. The young one grows into an adult by growth.
iv.	It has chitinous exoskeleton around the body.	Exoskeleton is in the form of fur.

4. **Write short notes**

Environmental conservation.

Ans : i) Environmental conservation is the protection of the environment for the future generations.
 ii) We are facing many environmental problems due to various natural and artificial

factors like population explosion, and industrialization, etc.

iii) Environmental conservation can be achieved in the following ways:

- a) Creating awareness through environmental education
- b) Protecting the environment by enacting laws and acts
- c) Planting trees
- d) Preventing any harm to the plant species and abiotic factors

iv) All the developed, developing, and underdeveloped countries of the world have accepted the responsibility of environmental protection.

v) Hence, protecting the environment should also be our social responsibility.

5. Give example of Fuels obtained from biomass.

- Ans : i) Methane biogas
 ii) ethanol
 iii) bio – diesel
 iv) Hydrogen - by bio photolysis of water.
 v) Gobar gas

Q.3 : Answer the following questions.

(Any five)

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1. Complete the following table.

Endangered Heritage Places of the Country	Threatened/endangered species of an animal	Reasons
Western ghat		
	Rhino	
	Tiger	

Ans :

Endangered Heritage Places of the Country	Threatened/endangered species of an animal	Reasons
Western ghat	Asiatic lion and wild bison	Mining industry and search for natural gas.
Manas Sanctuary of the Assam	Rhino	Dams and indiscriminate use of water.
Sunderban Sanctuary of West, Bengal	Tiger	Dams, deforestation, excessive fishing, trenches dug for same, etc.

2. What is disaster ? Which are two main types of disasters ?

Ans : United Nations has defined the disaster as 'the sudden event that leads to the huge loss of life and property'.

a) **Natural disasters** : These are 'all of a sudden' troubles to the mankind. Such events cause sudden changes in the environment and thereby cause the damage to it. Examples are floods, wet and dry famine, cyclones, earthquakes, volcanoes, etc.

b) **Man-made disasters** : Environment is also damaged due to use of natural resources for our development. This leads to sudden disasters, unexpected to human. Examples: war, fire, bomb fire, poisonous gases.

3. Select the appropriate options and rewrite the following paragraph.

(Proteins, testosterone, 9 Kcal, epithelial, phospholipids, lipids, growth hormone, progesterone, 4 Kcal, adipose connective)

Digestion of results in formation of fatty acids and glycerol. Different cells use fatty acid to produce various substance necessary to themselves. For e.g. the molecules called are required for production of plasma membrane. Fatty acids are required for production of hormones like , estrogen, , aldosterone, etc, and the covering around the axons of nerve cells. We get of energy per gram fo lipids. Excess lipids are stored in tissue in the body.

Ans : Digestion of **lipids** results in formation of fatty acids and glycerol. Different cells use fatty acid to produce various substance necessary to themselves. For e.g. the molecules called **phospholipids** are required for production of plasma membrane. Fatty acids are required for

production of hormones like **progesterone**, estrogen, **testosterone**, aldosterone, etc, and the covering around the axons of nerve cells. We get **9 Kcal** of energy per gram of lipids. Excess lipids are stored in **adipose connective** tissue in the body.

4. **Observe the picture and answer the following questions.**



- a) **Which mental disorder is shown in the picture?**
 b) **Which social message would you like to give through it?**

Ans : a) The picture depicts 'insensitivity' type of mental disorder. Nowadays, people are becoming insensitive towards others. The picture is of a road accident. A person is badly injured and is bleeding. But instead of helping the victim, people around are busy clicking photographs and videos on cell phones.

b) The following social message can be given through this picture.

- i) Instead of making video-clips of the accident, people should provide immediate medical help to the victim or take him to a nearby hospital so that his life is saved.
 ii) People should make constructive use of their cell phones; inform the police immediately and call for an ambulance.

5. **Millipedes belong to phylum Arthropoda ? Explain ?**

Ans : i) Body of millipedes is triploblastic, eucoelomate, bilaterally symmetrical and segmented.
 ii) Chitinous exoskeleton is present around their body.
 iii) These animals are unisexual.

iv) Prominent feature of Phylum Arthropoda is having jointed appendages.

v) Millipedes have several pairs of jointed appendages. Hence they are called as arthropods.

vi) Therefore, as millipedes show characteristic features that of phylum Arthropoda, they are called arthropods.

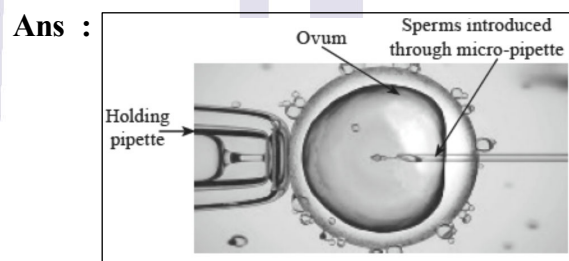
6. **Read the following statements and justify the same in your own words with suitable examples. Geographical isolation of organisms gradually leads to speciation.**

Ans : i) It is the population of organisms that are separated by geographical factors like rivers changing their course, drifting of continent etc. and hence not able to exchange genetic material with other organisms of the same species.

ii) **Example:** A mountain range prevents two types of goat from mating, causing the gene pool to become less varied.

iii) **Example:** A forest fire causes permanent separation of a group of deer from their native population causing the small group to interbreed only with one another. Over the time the group becomes an entirely different species.

7. **Draw neat labelled diagrams Fertilization in a test tube**



8. a) **Which substance is used to produce cheese?**
 b) **Which enzyme was used earlier for cheese production?**
 c) **Which enzyme is used to produce vegetarian cheese?**

