

(REVISED COURSE)

Time : 2 Hours

(Pages 6)

Max. Marks : 40

---- MODEL ANSWER ----

Q.1(A) Choose the proper alternative and fill in the blanks: 5

- (1) Ans. (d) Sunderban sanctuary
- (2) Ans. © Light
- (3) Ans. (c) Aristotle
- (4) Ans. (d) Maharashtra
- (5) Ans. (d) Resurgence

(B) Attempt the following:

(1) Find the odd one out:

Ans. Folding tongue. It is not a vestigial organ.

(2) State 'True' or 'False', if 'False' correct it:

Ans. True

(3) Write the correlated terms:

Ans. Edible colours

(4) Name the following:

Ans. Phase of emergency

(5) Answer the following in one line:

Ans. (b) 1980

Q.2(A) Give reasons:(Any Two) 4

- (1) Ans. 1. When the carbon dating method was used to assess the age of fossils, it was understood that invertebrates were present on the earth much before the vertebrates.
 2. The fossils of invertebrates are present in lower layers of earth's strata.
 3. They were seen in Palaeozoic era of geological time period.

4. Vertebrates dominated during Coenozoic era. Their fossils are seen in the upper strata of the earth's crust.
5. The structural complexity also increased in vertebrates.
6. All these facts indicate that vertebrates have been slowly originated from invertebrates.

(2)Ans.

1. In most of the households there is more boundaries on girls and excessive freedom for boys.
2. Boys do not participate in the domestic duties whereas girls have compulsion for the same.
3. In society too, girls have to face the problems like teasing and molestation. This creates insecurities among the minds of girls.
4. The social change has made women independent and equal but still this male dominated society and the gender inequality persists causing more stress for young girls.

(3)Ans.

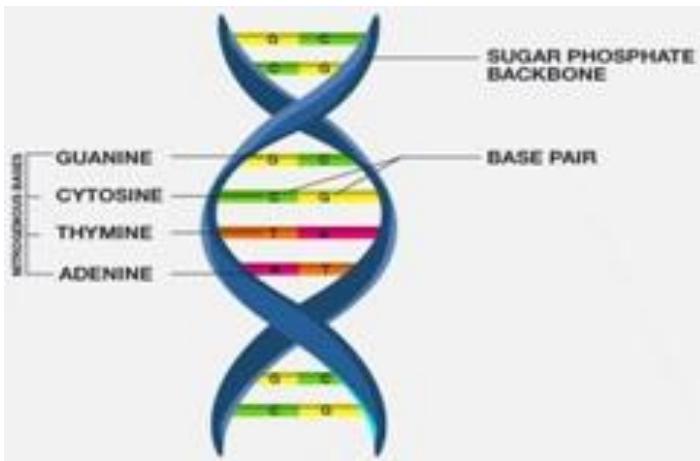
1. By using industrial microbiology, the commercial use of microbes is done.
2. In such experiments, various economic, social and environment related processes and products are included.
3. Various processes using different microbes are done. In this, fermentation processes are used to make bread, cheese, wines, enzymes, nutrients, etc.
4. Certain types of antibiotics are also made by using processes of industrial microbiology.
5. In pollution control and solid waste management, the industrial microbiology becomes helpful.
6. In farming too biotechnology is used to produce BT crops.

(B) Answer the following:(Any Three)

6

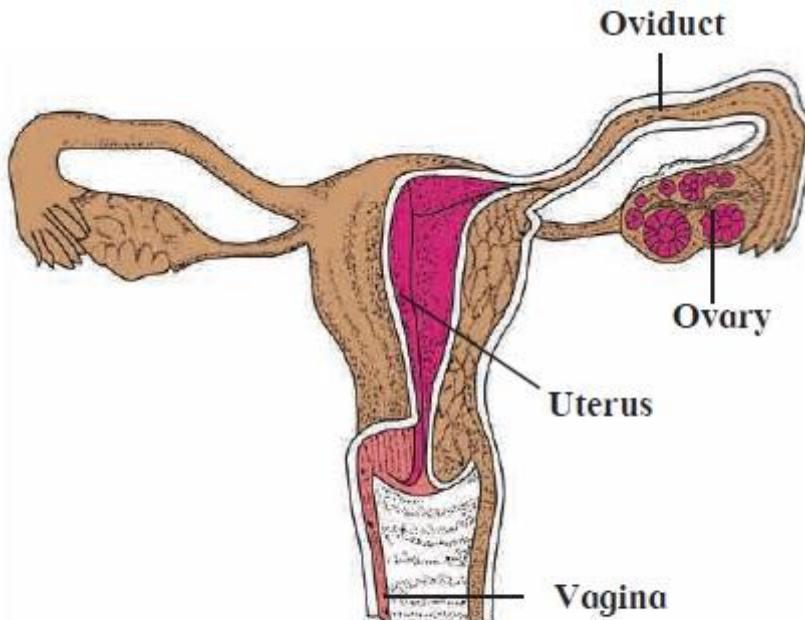
(1)Ans. (a) The structure is representing a double stranded DNA (deoxyribonucleic acid).

(b)



(2)Ans. We learn from this story is that many people come together to destroy the forest, but a single person, if determined, can establish a new forest and can contribute a lot for the conservation and protection of the environment.

(3)Ans.



Human female reproductive system

(4)Ans. Benefits of animal classification:

1. Study of animals becomes convenient.
2. Study of few animals from a group helps to understand about that entire animal group.
3. It gives idea about animal evolution.
4. Animals can be easily identified with great accuracy.

(5)Ans. (i) To listen to music, bird watching and nature trails, reading good books etc.
(ii) AIDS, Tuberculosis and Leprosy.

Q.3 Answer the following:(Any Five)

15

(1)Ans. i. The process depicted in the given diagram is of cytokinesis.
ii. This step takes place at the after the completion of karyokinesis (nuclear division) of mitosis.
iii. In this, the cytoplasm divides by cytokinesis and two new cells are formed which are called as daughter cells.
iv. In this process, a notch is formed at the equatorial plane of the cell which deepens gradually and thereby two new cells are formed.
v. However, in case of plant cells, instead of the notch, a cell plate is formed exactly along midline of the cell and thus cytokinesis is completed.

(2)Ans. 1. The first symbol is of “Recycle” symbol: This indicates that an object is capable of being recycled. Sometimes this symbol is used with a percentage figure in the middle to explain that the packaging contains x% of recycled material. This symbol is essential in maintaining the natural resources by. For this, first we need to segregate the waste and collect objects which can be recycled.

2. The second symbol is of “Save water”: - Water is precious and important for every living organism. There is water problem in many major cities and villages. In case of lack of water, people dies and loss of agriculture occurs which affects the nation’s economic condition. Hence, it is very essential that we save water.

3. The third symbol is of “Solar energy”:- Solar energy is the renewable type of energy. Hence, we should use this source of energy to replace the polluting and exhaustible fuels.

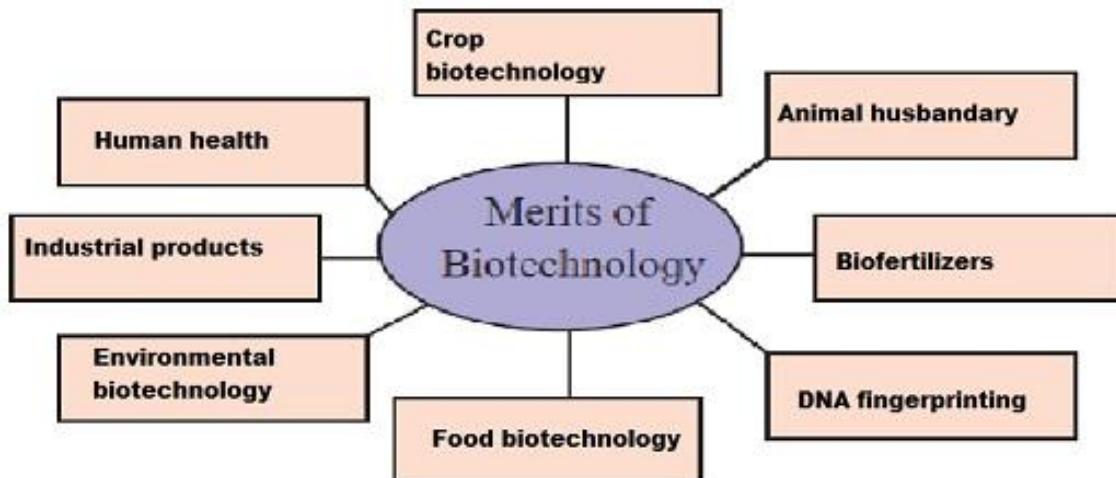
Due to such symbol, we can change ourselves and others into more eco-friendly persons.

(3)Ans. A) Xanthum gum is obtained by fermentation of starch and molasses with the help of *Xanthomonas* species.

B) It is soluble in hot and cold water and has high density.

C) It is used for production of Pigments, toothpaste and weedicides.

(4)Ans.



(5)Ans. Objectives of mock drill are:

1. Evaluating the response to the disaster.
2. Improving the coordination between various departments of disaster control.
3. Identification of own abilities.
4. Improving the ability of quick response to disaster.
5. Checking the competency of the planned actions.
6. Identifying the possible errors and risks.

(6) Ans.

WHAT	WHERE	OXYGEN NEEDED?	NET ATP
GLYCOLYSIS	CYTOPLASM	NO	2
CITRIC ACID CYCLE(KREBS CYCLE)	MITOCHONDRIA	YES	2
ELECTRON TRANSPORT CHAIN (ETC)	MITOCHONDRIA	YES	34
		TOTAL ATP PRODUCED	38

(7) Ans. 1. Production of various useful aquatic organisms with the help of water is called as blue revolution.
2. Farm ponds and the fishes are very common in East Asian countries.
3. However, people are not only thinking of cultivating the fishes and shrimps but other aquatic plants and animals too.
4. Government of India has vowed to increase the production by encouraging the people for pisciculture by launching the program 'Nil-Kranti Mission-2016' (NKM-16). 50% to 100% subsidies are offered in this case.
5. Marine and fresh water fishery is possible on large scale.
6. Fresh water fishes like rohu, catla and other fishery products like shrimp and lobsters are being cultured on large scale.

(8) Ans.

Butterfly	Bat
1. It is a non- chordate animal. 2. Chitinous exoskeleton is present. 3. Body is divided into head, thorax and wings. 4. It have jointed appendages.	1. It is a chordate animal. 2. Exoskeleton is in the form of hairs or fur. 3. Body is divided into head, neck, trunk and tail. 4. No joint appendages are present.

Q.4 Answer the following:(Any One)

5

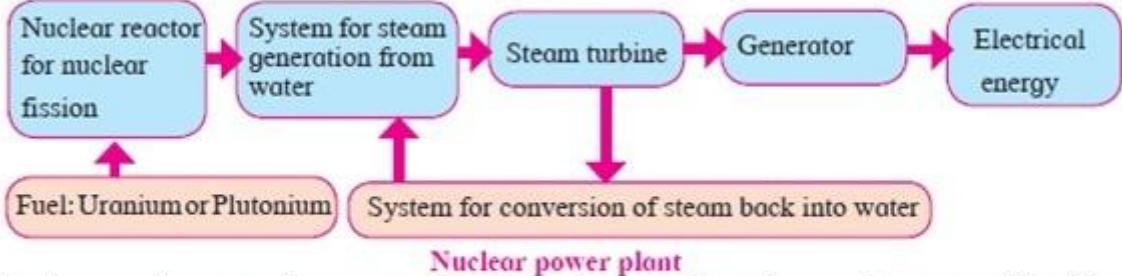
(1) Ans. i. Day 1 to 5 is the period of menstruation.
ii. Ovulation occurs on the 14th or 15th day of the menstrual cycle.
iii. A new corpus luteum develops from an ovarian follicle during each menstrual cycle. It develops after ovulation and remains active till 28th day of the menstrual cycle. During this time if there is no fertilization happens, then corpus luteum degenerates. Corpus luteum secretes estrogen and progesterone hormones.
iv. Changes happen in Ovary and uterus during menstrual cycle.

V. In menstrual cycle, day 5th to 14th is called "Period of regeneration of endometrium".

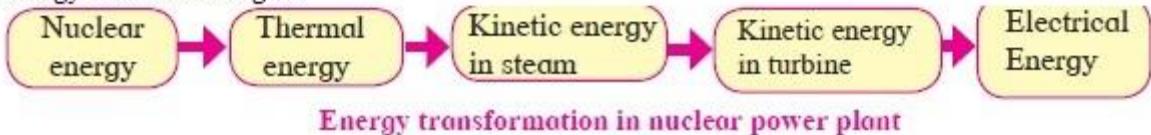
Vi. In menstrual cycle, day 15th to 28th is called "Period of secretions of glands in endometrium".

(2) Ans. In the power plant based on nuclear energy, steam turbine is used to rotate the generator. However, here, the energy released by fission of nuclei of atoms like Uranium or Plutonium is used to generate the steam of high temperature and high pressure. The energy in the steam rotates the turbine, which in turn drives the generator producing electricity.

The flow chart of nuclear power plant is shown in fig



Thus, here nuclear energy is converted into thermal energy, thermal energy is converted into kinetic energy of steam, kinetic energy of steam is converted into kinetic energy of turbine and finally the kinetic energy of the turbine is converted into electrical energy. The step-by-step transformation of energy is shown in figure



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