



VIVEK TUTORIALS

Preliminary Examination [MODEL ANSWER]

Std: SSC (E.M)

Subject: Science & Technology II

Time: 2 Hours

Date : 30/Jan/2020

Max Marks: 40

1. It is necessary to solve all the questions.
2. Draw neat and labelled diagrams wherever necessary.
3. Start every new main question on separate page.
4. Figures on the right indicate marks.
5. For each Multiple Choice Question (1.B), ONLY first answer will be considered.
6. Write answer of each MCQ with option number.
Eg. i) a..... ii) c.....

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

5

- (1) Ans. (c) Centromere
- (2) Ans. © Mirrors
- (3) Ans. (a) Protoplasmic grade
- (4) Ans. © Cylinder should be covered with wet blanket.
- (5) Ans. (d) Saccharomyces cerevisiae

(B) Attempt the following:

5

(1) Find the odd one out:

1

Ans. Edible oil (All others are fossil fuels)

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

1

Ans. True

(3) Write the correlated terms:

1

Ans. Lactic acid

(4) Name the following:

1

Ans. This is an image of in vitro fertilization or test tube fertilization.

(5) Answer the following in one line:

1

Ans. Bread and other bakery products, beer and different types of wines are prepared by using dry yeast.

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

4

- (1) Ans. 1. Cell division is one of the very important properties of cells and living organisms.
2. Due to this property only, a new organism is formed from existing one, a multicellular organism grows up and emaciated body can be restored.
- (2) Ans. i. There is an inter-relationship between humans and the environment.
ii. In an attempt to live a satisfactory life, humans over-utilized natural resources.
iii. Natural resources are depleting in nature. Humans need to conserve and improve its quality in order to maintain the environmental balance.
iv. Humans are responsible for the deterioration of nature and its components.
v. Hence, only humans can conserve and improve the quality of nature.
- (3) Ans. 1. In power plants, generators work on the principles of electromagnetic induction and its needs to be rotated.
2. For this rotation purpose, there is a turbine for each generator and energy is needed for rotation of a turbine.
3. According to the type of energy source that is used for rotation, there are different types of

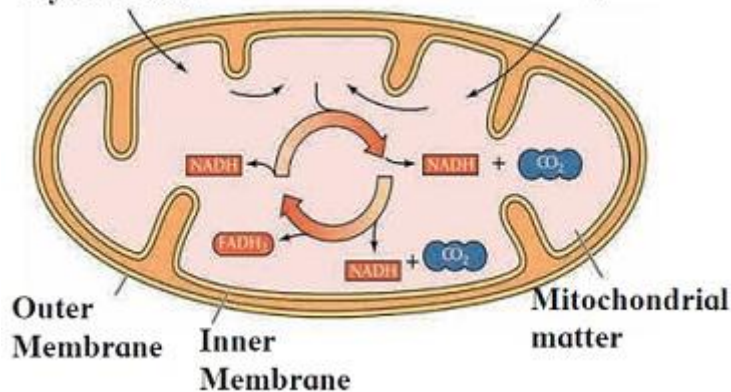
turbines.

4. Therefore, the construction of turbine is different for different types of power plants.

(B) Answer the following:(Any Three)

6

(1) Ans. **Pyruvic acid** **Fatty acids**



(2) Ans.



A – Recycle B – Environmental Protection C – Save Water

(3) Ans. A) Modern landfill site.

B) The waste is used in this method is degradable waste being accumulated in urban areas

C) The useful substances can be obtained from such methods are compost and methane gas.

(4) Ans. i. Type of connection of solar cells in 'A' is 'in series' connection and it will give maximum potential difference.

ii. Advantage: Solar energy is an eco-friendly source of energy. It does not cause any pollution.

Disadvantage: As it can be produced in presence of sunlight only, it needs to be stored in batteries for use.

(5) Ans. Large pits should be dug in open spaces far away from the residential area and those pits should be lined with plastic sheets as a precaution against pollution of soil due to leaching of toxic and harmful materials. This dug should be covered by layer of soil.

Q.3 Answer the following:(Any Five)

15

(1) Ans.

| Hormones | Released from | Target cell | Effect |
|------------------------------------|--------------------------|--------------------------|--|
| GnRH | Hypothalamus | Anterior pituitary gland | Secrete LH and FSH |
| LH(LUTENISING HORMONE) | Anterior pituitary gland | Leydig cells in testes | Secrete testosterone |
| Follicle stimulating hormone (FSH) | Anterior pituitary gland | Sertoli cells in testes | Make cells more responsive to testosterone |
| Testosterone | Leydig cells in testes | Sertoli cells in testes | Stimulates spermatogenesis |
| Inhibin | Sertoli cells in testes | Anterior pituitary gland | Stops FSH secretion |

(2) Ans. Food chain is shown in the picture.

Green plant– Producer

Grasshopper– Primary consumer

Small bird– Secondary consumer

Snake– Tertiary consumer

Owl– Top consumer

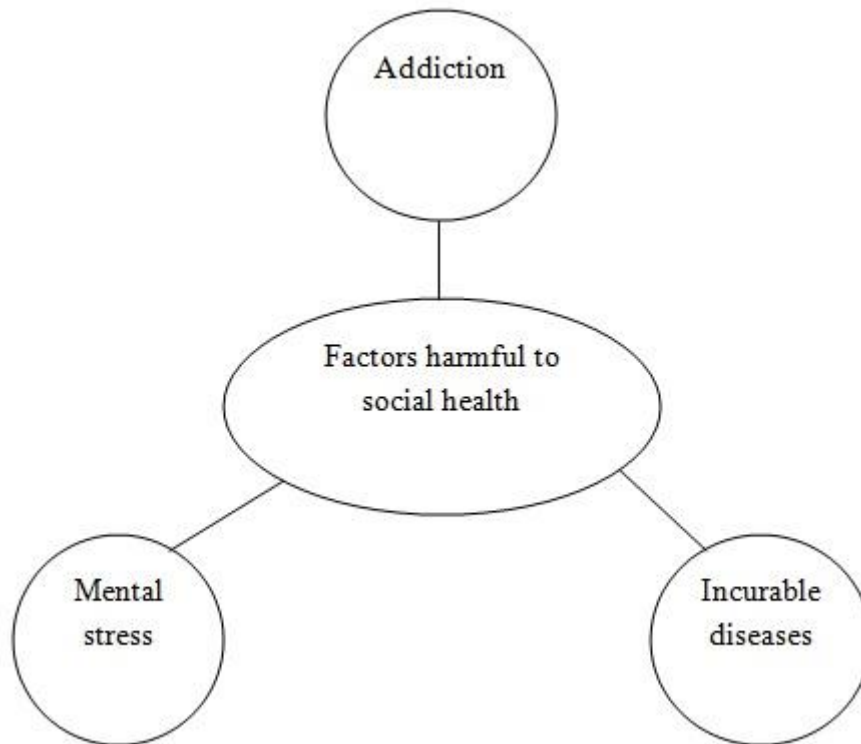
- (3) Ans. 1. Herbs such as black pepper, cinnamon, myrrh, aloe, sandalwood, ginseng, red clover, burdock, bayberry, and safflower are used to heal wounds, sores and boils.
2. Basil, Fennel, Chives, Cilantro, Apple Mint, Thyme, Golden Oregano, Variegated Lemon Balm, Rosemary, Variegated Sage are some important medicinal herbs and can be planted in kitchen garden. These herbs are easy to grow, look good, taste and smell amazing and many of them are magnets for bees and butterflies.
3. Many herbs are used as blood purifiers to alter or change a long-standing condition by eliminating the metabolic toxins. These are also known as 'blood cleansers'. Certain herbs improve the immunity of the person, thereby reducing conditions such as fever.
4. Some herbs are also having antibiotic properties. Turmeric is useful in inhibiting the growth of germs, harmful microbes and bacteria. Turmeric is widely used as a home remedy to heal cut and wounds.
5. To reduce fever and the production of heat caused by the condition, certain antipyretic herbs such as Chirayta, black pepper, sandal wood and safflower are recommended by traditional Indian medicine practitioners.
6. Sandalwood and Cinnamon are great astringents apart from being aromatic. Sandalwood is especially used in arresting the discharge of blood, mucus etc.
7. Some herbs are used to neutralize the acid produced by the stomach. They serve as antacids. The healthy gastric acid needed for proper digestion is retained by such herbs.
8. In case of medicines made from harmful chemicals, they have various side effects and are not safe to be used without medical supervision.
9. Therefore, due to above benefits of medicinal plants and disadvantages of medicines made from chemicals, there is great importance of medicinal plants.

(4) Ans.

| <i>Asexual reproduction</i> | <i>Sexual reproduction</i> |
|--|---|
| Requires 1 parent. | Requires 2 parents. |
| Produces offspring identical to parent. | Produces offspring different from parents. |
| Can produce many offspring quickly | Requires more time and energy to produce offspring. |
| Results in limited variability within a species. | Result in extensive variation within a species. |

- (5) Ans. i. The picture depicts 'insensitivity' type of mental disorder.
- ii. Social message:
1. Instead of making video-clips of the accident, provide help to the victims.
 2. Inform the police immediately.
 3. As per the situation, provide CPR (Cardiac-Pulmonary Resuscitation) to the victim; if necessary.
 4. Call '108' for an ambulance.
- (6) Ans. 1. We are daily using various products prepared from fruits. We all consume products like chocolates, juices, jams and jellies.
2. All these products can be produced by processing on fruits.
3. Fruits are perishable agro-produce. It needs the processing in such a way that it can be used throughout the year.
4. Fruit processing includes various methods ranging from storage in cold storage to drying, salting, air tight packing, preparing murabba etc.
5. Also, fruit processing can increase the economy of country because there is great demand of fresh and good condition fruits in national and international markets.
6. In addition, processed fruits help in maintaining good health because they provide vitamins and minerals.
7. Hence, the fruits processing is important for the human life.
- (7) Ans. i. Tobacco products are included in 'ADDICTION'.

ii. Tobacco products cause the serious diseases like 'cancer'. Occurrence of such diseases on large scale is nothing but harm to the social health.



(8) Ans. 1. We face different types of major or minor disasters in our daily life.

2. Varieties of disasters like accidents, stampede, injuries in fighting, electric shock, burns, heat shock, snake bite, dog bite, fire due to electric short circuit, epidemic of any disease, etc. happen around us.

3. Victims of disaster need to be offered some primary help before actual medical treatment because there may be delay in getting actual medical treatment due to various problems such as transportation, unavailability of doctors etc. Hence, to save life of injured people, primary treatment should be given. This primary treatment is known as First aid i.e. first aid is useful in such circumstances.

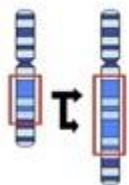
4. The need of knowledge of first aid may be required at any time in case of our parents, our siblings at home or in school etc.

5. Hence, it is essential to get the training of first aid.

Q.4 Answer the following:(Any One)

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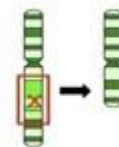
(1) Ans. **Duplication**



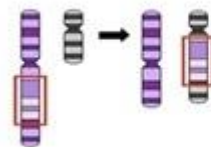
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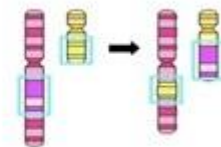
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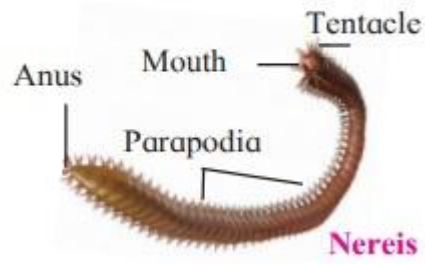
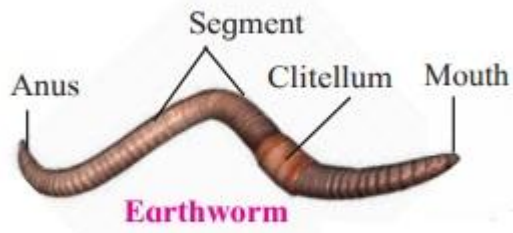
Translocation



(2) Ans. (a) A – Earthworm

B – Nereis

(b)



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