

- Note : 1) All questions are compulsory.  
2) Draw diagrams wherever necessary.  
3) Figures in the right indicate marks.

**Q. 1 A) Explain the terms. (Any four)**

- |                         |                        |
|-------------------------|------------------------|
| 1) Bioaugmentation      | 5) Gluconeogenesis     |
| 2) Fungicides           | 6) Aerobic respiration |
| 3) Xenobiotic compounds | 7) Chemotrophs         |
| 4) Biopesticides        | 8) Bioremediation      |

8

**B) Answer the following. (Any two)**

- 1) Write any three advantages of biopesticides.
- 2) Why substrate is considered as an important factor for bioremediation ?
- 3) Write a note on Fungi as pesticide.
- 4) Which enzymes and processes are required for initial intracellular attack of hydrocarbon ?

6

**C) Answer the following. (Any one)**

- 1) Write about GMOs used for bioremediation.
- 2) Explain the process of hydrocarbon degradation.

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**Q. 2 A) Answer the following in one sentence. (Any four)**

- 1) What are Sponules ?
- 2) What is enteric coated capsule ?
- 3) Define depot.
- 4) What are OTC drugs ?
- 5) What are magmas ?
- 6) Where would you apply ophthalmic ointments ?
- 7) Which parenteral route is suitable for administration of solutions or suspensions ?
- 8) Which rule involves children from 2-12 years of age for calculating the dose to be administered to children ?

8

**B) Describe in brief (Any two)**

- 1) Describe body surface area rule for calculating the drug dose for children.
- 2) Discuss briefly the pathological factors influencing dosage and drug action.
- 3) Give an account of sources of drugs.
- 4) How would you classify drugs ?

6

**C) Answer any one of the following.**

- 1) Give an account of dermal application of drugs.
- 2) Give reasons for administering drugs in suitable dosage forms.

**Q. 3 A) Answer the following. (Any 4)**

- 1) What is NG vehicle ?
- 2) What is break point Chlorination ?
- 3) What is the significance of disinfection of sewage water ?
- 4) What are non renewable sources of energy ?
- 5) What are the advantages of biogas ?
- 6) What is a sanitary landfill ?
- 7) Give any two non biological processes of biomass conversion.
- 8) What is natural gas ?

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**B) Answer the following: (Any two)**

- 1) Differentiate between activated Sludge & Sludge.
- 2) Give a brief account on petroleum plants.
- 3) Describe biological process of biomass conversion.
- 4) Write a note on oxidation lagoons.

**C) Answer the following: (Any one)**

- 1) Write a note on activated Sludge process.
- 2) Describe about energy crops in brief.

**Q. 4 1A) Answer a short note on any one of the following.**

- 1) Protozoa as a pesticide.
- 2) Biopesticides.

**1 B) Answer in one sentence. (Any three)**

- 1) Name the Fungi used to control nematodes.
- 2) Which respiration occurs when oxygen serves as the terminal electron acceptor?
- 3) Give the name of bacterium which control insect in Cabbage and Potatoes.
- 4) What is the optimum pH for bioremediation?
- 5) Name the toxins produced by Metarhizium Fungi.
- 6) Name the pathway that result in the generation of glucose for non carbohydrate carbon substrates.

**2 A) Write Short note on any one of the following.**

- 1) Syrups
- 2) Tolerance.

**2 B) Fill in the blanks (Any Three)**

- 1) An enteric coated capsule is applied on \_\_\_\_\_ medications.  
( Oral, Parenteral, topical )
- 2) \_\_\_\_\_ is an example of liniment.  
( Mercury, Camphor, Mint)
- 3) \_\_\_\_\_ is the study of sources of drugs derived from plants and animals.  
( Pharmacognosy, Pharmacy, pharmacotherapeutics)
- 4) \_\_\_\_\_ are flat round or rectangular preparations that are kept in the mouth.  
( Lozenges, Liniments, Lotions)
- 5) \_\_\_\_\_ is the example of drugs extracted from plants.  
( Opium, Digitalin, both)
- 6) \_\_\_\_\_ are alcoholic or hydroalcoholic preparations of vegetable drugs usually prepared in 10 % strengths.  
( Spirits, essences, tinctures )

**3 A) Write a note on any one of the following**

- 1) Biomass
- 2) Primary treatment of waste water.

**3 B) Name of the following (Any three)**

- 1) Any two water borne diseases.
- 2) Any two starch crops.
- 3) Any two renewable sources of energy.
- 4) Any two biofuels.
- 5) Any two types of solid wastes.
- 6) Any two protozoans found in sewage.

— The End —