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STD: XII

BIOLOGY SET -3

MARKS-70

BIO-BOTANY

MARKS-35

8X1=8

I. CHOOSE THE CORRECT ANSWER :

- A free living nitrogen fixing cyanobacterium which can also form symbiotic association with the water fern *Azolla*
 - Nostoc*
 - Anabaena*
 - Chlorella*
 - Rhizobium*
- In a fresh water environment like pond, rooted autotrophs are
 - Nymphaea and typha*
 - Ceratophyllum and Utricularia*
 - Wolffia and Pistia*
 - Azolla and Lemna*
- The plants of this group are adapted to live partly in water and partly above substratum and free from water
 - Xerophytes
 - Mesophytes
 - Hydrophytes
 - Halophytes
- Which of the following ecosystem has the highest primary productivity?
 - Pond ecosystem
 - Lake ecosystem
 - Grassland ecosystem
 - Forest ecosystem
- Which of the following is / are not a natural ecosystem?
 - Forest ecosystem
 - Rice field
 - Grassland ecosystem
 - Desert ecosystem
- Significance of food web is / are
 - it does not maintain stability in nature
 - it shows patterns of energy transfer
 - it explains species interaction
 - b and c
- Depletion of which gas in the atmosphere can lead to an increased incidence of skin cancer?
 - Ammonia
 - Methane
 - Nitrous oxide
 - Ozone
- One of the chief reasons among the following for the depletion in the number of species making endangered is
 - over hunting and poaching
 - green house effect
 - competition and predation
 - habitat destruction

II. ANSWER ANY FOUR OF THE FOLLOWING :

4X2=8

- What are ecological equivalents? Give one example.
- Distinguish habitat and niche
- Pyramid of energy is always upright. Give reasons
- Construct the food chain with the following data. Hawk, plants, frog, snake, grasshopper.
- Give four examples of plants cultivated in commercial agroforestry.
- Expand CCS.

III. ANSWER ANY THREE OF THE FOLLOWING :

3X3=9

- Lichen* is considered as a good example of obligate mutualism. Explain.
- How is rhizoid act as the structural defence by plants against fire?
- Name of the food chain which is generally present in all type of ecosystem. Explain and write their significance.
- Draw a pyramid from following details and explain in brief. Quantities of organisms are given-Hawks-50, plants-1000, rabbit and mouse-250 +250, pythons and lizard- 100 + 50 respectively
- Which one gas is most abundant out of the four commonest greenhouse gases? Discuss the effect of this gas on the growth of plants?

IV. ANSWER ALL THE QUESTIONS :

2X5=10

- What is soil profile? Explain the characters of different soil horizons.

OR

- Explain Raunkiaer classification in the world's vegetation based on the temperature.
 - List out the effects of fire to plants.
- Various stages of succession are given below. From that rearrange them accordingly. Find out the type of succession and explain in detail. Reed-swamp stage, phytoplankton stage, shrub stage, submerged plant stage, forest stage, submerged free floating stage, marsh meadow stage.

OR

- Suggest a solution to water crisis and explain its advantages.
- Explain afforestation with case studies.

BIO-ZOOLOGY

MARKS-35
8X1=8

I. CHOOSE THE CORRECT ANSWER :

- Choose the correctly match pair.
 - Amphetamines - Stimulant
 - LSD - Narcotic
 - Heroin - Psychotropic
 - Benzodiazepine - Pain killer
- A 30 year old woman has bloody diarrhoea for the past 14 hours, which one of the following organisms is likely to cause this illness?
 - Streptococcus pyogenes*
 - Clostridium difficile*
 - Shigella dysenteriae*
 - Salmonella enteritidis*
- B cells that produce and release large amounts of antibody are called
 - Memory cells
 - Basophils
 - Plasma cells
 - killer cells
- Cry toxins obtained from *Bacillus thuringiensis* are effective against for _____
 - Mosquitoes
 - Flies
 - Nematodes
 - Bollworms
- Cyclosporin – A is an immunosuppressive drug produced from _____
 - Aspergillus niger*
 - Manascus purpureus*
 - Penicillium notatum*
 - Trichoderma polysporum*
- The genetic defect adenosine deaminase deficiency may be cured permanently by
 - Enzyme replacement therapy
 - periodic infusion of genetically engineered lymphocytes having ADA cDNA
 - administering adenosine deaminase activators
 - introducing bone marrow cells producing ADA into embryo at an early stage of development.
- The first clinical gene therapy was done for the treatment of
 - AIDS
 - Cancer
 - Cystic fibrosis
 - SCID
- Recombinant Factor VIII is produced in the ----- cells of the Chinese Hamster
 - Liver cells
 - blood cells
 - ovarian cells
 - brain cells.

II. ANSWER ANY FOUR OF THE FOLOWING :

4X2=8

- What are interferons? Mention their role.
- List out chemical alarm signals produced during inflammation.
- Write short notes on Brewer's yeast
- Give any two bioactive molecules produced by microbes and state their uses.
- What are DNA vaccines?
- Differentiate between Somatic cell gene therapy and germline gene therapy

III. ANSWER ANY THREE OF THE FOLLOWING :

3X3=9

- List the causative agent, mode of transmission and symptoms for Diphtheria and Typhoid .
- Differentiate between active and passive immunity.
- Justify the role of microbes as a bio-fertilizer.
- What are transgenic animals? Give examples.
- If a person thinks he is infected with HIV, due to unprotected sex, and goes for a blood test. Do you think a test such as ELISA will help? If so why? If not, why?

IV. ANSWER ALL THE QUESTIONS :

2X5=10

- Explain the structure of immunoglobulin with suitable diagram.

OR

Explain the role of cry-genes in genetically modified crops.

- Mention the advantages and disadvantages of cloning.

OR

PCR is a useful tool for early diagnosis of an Infectious disease. Elaborate