

**TDC Odd Semester Exam., 2020
held in July, 2021**

FOUNDATION COURSE IN
ENVIRONMENTAL SCIENCE

(5th Semester)

Course No. : FCES-501

Full Marks : 50

Pass Marks : 17

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

Answer **five** questions, taking **one** from each Unit

UNIT—I

1. (a) Choose the correct options of the following : 1×3=3
- (i) The diameter of the earth is around 13000 km/14000 km/17000 km.
- (ii) Climax of mammalian evolution occurred in the earth during Quaternary/Tertiary period of Coenozoic era.

- (iii) The proportion of oxygen in the earth's atmosphere is approximately 27/21/39 percent.
- (b) What is palaeontology? Differentiate between population and community. 1+2=3
- (c) Discuss briefly the negative interactions among the organisms in the biosphere. 4

2. (a) Choose the correct options of the following : 1×3=3
- (i) The surface temperature of the sun is around 4600 °C / 3000 °C / 6100 °C.
- (ii) Expansion and dominance of dinosaurs occurred in the earth during Jurassic / Cretaceous / Devonian period of Mesozoic era.
- (iii) Commensalism is a negative / positive / neutral interaction among the organisms.
- (b) What are fossils? "A species is a natural biological unit, a reproductive unit and a genetic unit." Explain the statement. 1+2=3
- (c) What is meant by adaptation? Classify the natural environment. 2+2=4

(3)

UNIT—II

3. (a) Choose the correct options of the following : $1 \times 3 = 3$
- (i) The term 'Ecology' was coined by E. P. Odum / Charles Elton / Ernst Haeckel.
 - (ii) The physiological process in which oxygen is liberated is photosynthesis / respiration / transpiration.
 - (iii) Freshwater lake is an example of lotic/lentic/estuarine ecosystem.
- (b) Differentiate between gross primary productivity and net primary productivity. What is meant by secondary productivity? $2 + 1 = 3$
- (c) What are meant by biogeochemical cycles? Discuss briefly the process of ecological succession. $1 + 3 = 4$
4. (a) Choose the correct options of the following : $1 \times 3 = 3$
- (i) Each step in a food chain is referred as trophic level/trophic function/seral stage.

(4)

- (ii) In an ecosystem, macroconsumers are also known as phagotrophs/osmotrophs/transformers.
 - (iii) The Marianas Trench, the deepest part of the ocean in the Pacific ocean has depth of 11678 m/12300 m/10750 m.
- (b) Write a brief note on tropical rainforest. 3
- (c) Define ecosystem. Discuss the components of an ecosystem. $1 + 3 = 4$

UNIT—III

5. (a) Choose the correct options of the following : $1 \times 3 = 3$
- (i) The concept of 'biosphere' be changed to 'noosphere' was suggested by Suess/Haeckel/Vernadsky.
 - (ii) The population of India in 1991 was 819.4/548.2/685.2 millions.
 - (iii) India occupies only 8% / 5% / 12% of the world's land surface.
- (b) Classify natural resources with suitable examples. 3

(5)

- (c) How do population explosion and over-exploitation of resources affect carrying capacity of the environment? Elucidate. 4
6. (a) Choose the correct options of the following : 1×3=3
- (i) The Primitive Agricultural Societies (PAS) were evolved around 12000 / 11000 / 10000 years ago.
- (ii) Industrial Revolution took place in 17th / 19th / 20th Century.
- (iii) Natural gas is an example of renewable / non-renewable / in-exhaustible resources.
- (b) Write a brief note on abiotic resources. Name any two forest products. 2+1=3
- (c) What are meant by Agrarian Societies? What were their lifestyles and how did they influence the environment? 4

UNIT—IV

7. (a) Choose the correct options of the following : 1×3=3
- (i) The atmosphere contains over 5×10^{15} / 7×10^{12} / 9×10^9 metric tons of air.

(6)

- (ii) The concentration of carbon monoxide (CO) in blood of human being that may cause death is 1000/1100/1200 p.p.m.
- (iii) Decibel (dB) is the unit for measuring depth/noise/distance.
- (b) Define pollution. Differentiate between biodegradable and non-biodegradable pollutants with suitable examples. 1+2=3
- (c) Discuss the various sources of water pollution. 4
8. (a) Choose the correct options of the following : 1×3=3
- (i) Freshwater comprises only 3/4/5 percent of the earth's water supply.
- (ii) Radioisotopes have different numbers of electrons/neutrons/protons.
- (iii) Aerosols are particulates having size of less than/more than/equal to 1 micrometer (m).
- (b) Write a brief note on noise pollution. 3
- (c) Name major types of ionizing radiations of ecological concern. Enumerate the natural sources of radiation exposures to the environment. 1+3=4

(7)

UNIT—V

9. (a) Choose the correct options of the following : $1 \times 3 = 3$
- (i) Rainwater having pH value less than 4/5/6 is called acid rain.
 - (ii) Rodenticides are used for killing birds/rats/frogs.
 - (iii) Eastern part of Thar in India is a hyperarid/arid/semiarid desert.
- (b) Write briefly about the role of forests in soil and water conservation. 3
- (c) Discuss the impacts of urbanization on the social environment. 4
10. (a) Choose the correct options of the following : $1 \times 3 = 3$
- (i) The Minamata disaster in Japan was caused by toxicity of cadmium/methyl isocyanate/methylmercury.
 - (ii) The Chernobyl disaster took place in 1984/1986/1991.
 - (iii) The river Ganga extends to a length of approximately 2525/3245/1975 km.

(8)

- (b) Briefly write about the Ganga Action Plan. 3
- (c) Discuss the incident of Bhopal tragedy and its impacts. 4
