Registration No: | | | | | | | | | | |

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B.TECH
PES1C001

1st Semester Regular Examination 2016-17
Environmental Studies & Health Care Engineering
BRANCH(S): ALL
Time: 3 Hours
Max Marks: 100
Q.CODE: Y515
Answer Part-A which is compulsory and any four from Part-B.
The figures in the right hand margin indicate marks.

Part – A (Answer all the questions)

Q1 **Answer the following questions: *multiple type or dash fill up type*** **(2 x 10)**

a) Which of the following can cause depletion of ozone layer? (a) H_2S (b) CO_2 (c) Aerosols (d) smoke
b) The presence of which of the following gas in air checks the harmful UV-rays from the sunlight? (a) NO (b) O_3 (c) SO_2 (d) CO_2
c) In BOD test, the standard temperature is _____ ^{0}C and standard time period is _____ days.
d) The chemical that is added to water to kill pathogens is called _____.
e) A dense growth of plant life due to presence of nutrients in water is known as _____.
f) Those sources whose location can be readily identified are called _____.
g) The sequence of who eats whom in an ecosystem to obtain nutrition is known as _____.
h) Which of the following is a physical hazard? (a) Vibration (b) Virus (c) Toxic chemicals (d) explosives
i) Silicosis is caused due to inhalation of _____.
j) Typhoid fever is caused by _____ bacteria.

Q2 **Answer the following questions: *Short answer type*** **(2 x 10)**

a) What is COD?
b) Define tolerance and environmental gradient.
c) What is smog? Give an example.
d) Mention (at least four) causes of soil pollution.
e) What are the objectives of wild life protection act (1972)?
f) Define criteria pollutants. Give an example.
g) Define nutrients. Name all the nutrients a human body requires to stay healthy.
h) Mention the objectives of environmental sanitation.
i) What are the main objectives of OSHA (at least two)?
j) Mention the steps involved in first aid treatment for heat burn.

Part – B (Answer any four questions)

Q3 **a)** Draw a vertical temperature profile diagram of the atmosphere and briefly discuss on it. **(10)**

b) Discuss the various roles of IT in human health. **(5)**

Q4 **a)** Prepare a flow diagram for EIA. Briefly discuss on the various steps involved in it. **(10)**

b) Write a short note on Water cycle. **(5)**

Q5 **a)** What are hazardous wastes? Briefly discuss the various steps followed in the management of hazardous wastes. **(10)**

b) Discuss on the energy flow in an ecosystem using a model flow diagram. **(5)**

Q6 **a)** What is occupational hazard? Mention the various types of hazards found in pharmaceutical industries. Enumerate the hazard control measures in the various units of pharmaceutical industries. **(10)**

b) What is food chain? What is its significance? Write a short note on grazing food chain. **(5)**

Q7 **a)** What is surface water? Discuss the various steps involved in the purification of surface water for domestic use. **(10)**

b) Write a short note on “Trickling filter”. **(5)**

Q8 **a)** What is primary air pollutant? Discuss on (a) cyclone separator and (b) Cottrell’s electrostatic precipitator as means to control air pollutants. **(10)**

b) What is noise? What is its unit? Mention the various methods to control noise pollution. **(5)**

Q9 **a)** What do you mean by occupational diseases? List some of it. How can we prevent it through medical measures, engineering measures and legislation? **(10)**

b) In an experiment, sewage water sample of 25.0 mL was refluxed with 10 mL of 0.25 N $K_2Cr_2O_7$ solutions in presence of dil. H_2SO_4, Ag_2SO_4 and $HgSO_4$. The unreacted $K_2Cr_2O_7$ solution required 7.0 mL of 0.1 Ferrous Ammonium Sulphate (FAS) solution. **(5)**

10 mL of the same $K_2Cr_2O_7$ and 25.0 mL of distilled water under same condition as the test sample required 27.0 mL of 0.1 N FAS solution. Find the chemical oxygen demand of the sewage water.