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Total Number of Pages : 01

B.Tech  
PBT7J001

7<sup>th</sup> Semester Regular Examination 2019-20

ENVIRONMENTAL BIOTECHNOLOGY

BRANCH : BIOTECH

Max Marks : 100

Time : 3 Hours

Q.CODE : HR016

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Only Short Answer Type Questions (Answer All-10) (2 x 10)

- What are genetically modified organism?
- How many mg/L of  $\text{Cr}_2\text{O}_7^{2-}$  are consumed if the COD of a wastewater sample is 450 mg/L.
- Differentiate between acetogenic and fermentative bacteria?
- Define waste and pollutant?
- What is biohydrogen?
- Compound totally resistant to biodegradation is called?
- Differentiate between direct and indirect leaching?
- What is biological detoxification?
- Define bioreporter and biomarker?
- What do you mean by desulfurization of coal?

Part- II

Q2 Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Analyze various applications used for the treatment of municipal and industrial waste water?
- What are the characteristics of wastewater?
- Explain Microbial Systems for Heavy Metal Accumulation?
- Briefly explain surfactants and microbial treatment of oil pollution?
- Write the advantages & disadvantages of biocatalysts?
- Give an account of processes for the transformation of environmental contaminants.
- Briefly describe the mechanisms of degradation of various hydrocarbons?
- Write the role of microbes in petroleum extraction?
- Explain biotechnology application of sewage treatment.
- Differentiate between trickling filters and activated sludge process.
- Explain role of biotechnology in mineral processing.
- Explain various techniques used for heavy metal removal?

Part-III

Q3 Only Long Answer Type Questions (Answer Any Two out of Four) (16)

What do you understand by biosensor? Write its various applications?

Q4 What do you mean by radionucleids? Give details on its microbial reduction (16)

Q5 What is Biogas? Briefly describe the various substrates and different digesters used for biogas production? (16)

Q6 Describe the methodology used for the degradation of xenobiotics in environmental conditions (16)