

19 OCT 2019

Paper: MIC-CC-304- Soil & water microbiology & environmental pollution

Time: 02.30 Hours.

Paper Code: 20672

Total marks: 70

Instructions: (i) Figures to the right indicate marks for respective question.
(ii) Draw neat, clean and labeled diagram wherever required.

Q.1 (A)	Discuss: Methods of enumeration of soil microflora.	14
	OR	
Q.1(A)(i)	Explain: Mycorrhiza.	07
Q.1(A)(ii)	Explain: Carbon cycle	07
Q.1 (B)	Short Questions (Attempt any FOUR)	04
	1) Enlist types of soil.	
	2) What is humus?	
	3) Enlist any 2 symbiotic nitrogen fixing bacteria.	
	4) What is pedogenesis?	
	5) What is the significance of Winogradsky Column?	
	6) Define: Rhizosphere.	
Q.2 (A)	Discuss: Purification of drinking water.	14
	OR	
Q.2 (A)(i)	Discuss: Causative agent , symptoms,diagnosis & prevention of cholera.	07
Q.2(A)(ii)	Explain: Membrane filter technique.	07
Q.2(B)	Short Questions (Attempt any FOUR)	04
	1) Enlist types of water.	
	2) What are the reasons of false positive presumptive test?	
	3) Name the causative agents of gastroenteritis & Amebic dysentery.	
	4) Define: Potable water.	
	5) Name 2 microbial indicators of fecal pollution other than coliforms.	
	6) Which test is used for diagnosis of typhoid?	
Q.3(A)	Explain: Anaerobic sludge digestion.	14
	OR	
Q.3(A) (i)	Discuss: Solid waste processing & composting.	07
Q.3(A)(ii)	Write on: Imhoff tank.	07
Q.3(B)	Short Questions (Attempt any THREE)	03
	1) Define: BOD.	
	2) Enlist aerobic waste water treatment methods.	
	3) What is activated sludge?	
	4) What is the role of zoogloal film in trickling filter?	
	5) How re typical & atypical coliforms differentiated by IMViC?	
Q.4(A)	Discuss: water pollution.	14
	OR	
Q.4(A) (i)	Discuss: Heavy metal pollution.	07
Q.4(A)(ii)	Write on: Sources & control of air pollution.	07
Q.4(B)	Short Questions (Attempt any THREE)	03
	1) Which bacteria is considered as " Super bug"?	
	2) Enlist primary air pollutants.	
	3) How do microbes help in waste management?	
	4) Define: Pollution.	
	5) How does radioactive pollution affect human?	