



INDIAN SCHOOL AL WADI AL KABIR

Class: XII	Department: SCIENCE 2020 – 21 SUBJECT : BIOLOGY	Date of submission: 20.12.2020
Worksheet No: 12 WITH ANSWERS	UNIT: MICROBES IN HUMAN WELFARE	Note: A4 FILE FORMAT
NAME OF THE STUDENT	CLASS & SEC:	ROLL NO.

ONE MARK QUESTIONS

1. Name two microbes beneficial in biotechnology.
2. List two industrially significant enzymes.
3. What is the significance of flocs in the biological treatment of wastewater?
4. How are the holes (spongy texture) formed in bread and cheese?
5. Why is secondary wastewater treatment referred to as biological approach?

TWO MARKS QUESTIONS

6. What is the key difference between primary and secondary sewage treatment?
7. What is Anaerobic Sludge digester?
8. Give reasons for the following
 - (a) Mycorrhizae are used as biofertilisers.
 - (b) Methanogens can produce gobber gas.
9. How are cyanobacteria used in the fields of paddy?
10. The Yamuna action plan and the Ganga action plan have been initiated to reduce BOD of these rivers in and around Delhi. What is understood by this statement?

THREE MARKS QUESTIONS

11. Name any one fungal and viral biocontrol agent each. Why the viral biocontrol agent is used in ecologically sensitive areas?
12. (i) Give reason for the characteristic flavor of Roquefort cheese.
(ii) Name a virus that causes respiratory infections other than Rhino viruses.

(iii) Where do you think the bacteria for fermentation of idli, dosa dough came from?

(iv) What is the importance of Chain and Florey in microbiology?

13. Mention the product and its use produced by each of the microbes listed below:

(a) *Lactobacillus*

(b) *S. cerevisiae*

14. Name the pest that destroys cotton bolls. Explain the role of *B. thuringiensis* in protecting the cotton crop against the pest to increase yield.

15. With the help of a neat labelled diagram explain the structure of a biogas plant.

FIVE MARKS QUESTIONS

16. a) What is the consequence of discharging larger volumes of sewage that is untreated into a river?

b) Distinguish between primary and activated sludge

c) Small volume of activated sludge is pumped back to aerobic tank. Why?

d) What is the significance of anaerobic sludge digestion in sewage treatment?

PREVIOUS BOARD QUESTIONS

1. Give an example of a microbe that is used in statin production. How do they lower blood cholesterol level?

2. Name the common trait shared between *Clostridium butylicum*, *Lactobacillus* and *Aspergillus niger*.

3. Name the class of bacteria found both in the sludge of sewage treatment and in the rumen of cattle.

4. What is the role of the bacteria *Bacillus thuringiensis* in regulating caterpillars of insect pests?

5. a) What is the role of microbes in reducing environmental degeneration caused by chemicals?

b) Giving two examples describe biofertilisers.

6. For the execution of treatment of massive volumes of waste water rich in organic matter, why is aerobic degradation more important than anaerobic degradation?

7. Discuss the main ideologies crucial in the biological control of diseases and pests.

8. Name the fungus used in organ transplant treatment. Write the product of this organism and explain its specific use

HINTS/SOLUTION

ONE MARK QUESTIONS		
1	Bacillus thuringiensis, E. coli	1
2	Lipases, pectinases	1
3	Decomposes organic material and reduces BOD	1
4	Due to the formation of carbon dioxide due to fermentation	1
5	It is done with the help of microbes	1
TWO MARKS QUESTIONS		
6	Primary treatment – filtration and sedimentation, physical process; Secondary – biological, with the help of microbes	2
7	Decomposition with the help of anaerobic bacteria, after aerobic treatment, mention biogas formation	2
8	(a) Mention the roles of mycorrhizal association (b) Can produce methanogens by anaerobic process	2
9	Nitrogen fixation, mention examples	2
10	GAP and YAP – objective is to reduce pollution in these two rivers. Low BOD means less pollution	2
THREE MARKS QUESTIONS		
11	Fungal – Trichoderma, Viral – Nucleopolyhedro viruses (Mention its importance in integrated pest management)	3
12	(i) Special fungi during ripening process (ii) Adenovirus (iii) From urid dal (iv) Mention their role in the discovery of antibiotics	3
13	Lactic acid – mention the roles Ethyl alcohol – mention the roles	3
14	Lepidopteran, mention how Bt toxin kills the insect larvae and give the role of the bacterium as biocontrol agent	3
15	Biogas plant – explanation and diagram	3
FIVE MARKS QUESTIONS		
16	(a) Mention about the pollution caused by this (b) Primary sludge – definition, formed during primary treatment, activated sludge – formed during secondary treatment, with flocs (c) Acts as inoculum	5

	(d) Role of anaerobes	
	PREVIOUS BOARD QUESTIONS	
1	Monascus purpureus, It acts by competitively inhibiting the enzyme responsible for synthesizing of cholesterol.	2
2	Microbes used for human welfare for the production of economically important acids.	1
3	Methanogens	1
4	Mention the role of the bacterium as biocontrol agent	1
5	(a) Mention the roles of microbes as biocontrol agents and biofertilisers (b) Examples for biofertilisers	3
6	Aerobic degradation reduces the BOD considerably and hence reduces the pollution and the explanation of the process.	3
7	Mention the importance of microbes in organic farming and holistic approach	3
8	Cyclosporin A, Trichoderma polysporum, Immunosuppressant	3

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