

UNIT – VIII**BIOLOGY IN HUMAN WELFARE****EACH QUESTION CARRIES 1 MARK**

1. All human beings have Proto oncogenes.
But all of them do not suffer from cancer. Why? (1)
Hint. Proto oncogene does not express itself.
2. Do you agree that infected cells of our body can protect the non infected cells? If yes, how?
Hint.Through interferons (1)
3. Why is it organ transplantation always done between very close relatives? (1)
Hint.Histocompatibility to be seen
4. Against which diseases does the MMR vaccine give protection? (1)
Ans.Measels, Mumps, Rubeolla
6. Expand NACO. (1)
Ans. National AIDS control Organization
7. Which day is observed as World AIDS Day? (1)
Ans. December 1
8. Name the disease that is caused due to abnormal increase in Lymphocytes of blood. (1)
Ans. Leukemia/Blood cancer

EACH QUESTION CARRIES 2 MARKS

9. A person suffering from Elephantiasis has an abnormally increased swelling in his lower limbs. What could be the reason for the swelling?
Hint: Affect on the lymphatic vessels.
10. Why do sports persons often fall victims to Cocaine addiction. (2)
Hint; Effect on CNS – increase in energy
11. Chewing of Tobacco causes increase in blood pressure. Justify. (2)
Hint: Role of nicotine.
12. Complete the blank spaces: (2)

Type of pathogen	Name of pathogen	symptoms	Disease name
I) a -----	Entamoeba	Abdominal pain	b . -----
II) Bacteria	c. -----	Respiratory problem	d. -----
13. Why should one take an immuno suppressants agent all through his life after an organ transplantation?(2)
Hint: Body able to differentiate the self and non-self at any time and reject the grafted the part.
14. Complete the following. (2)
TB:Airborne :: Malaria: -----
Colostrum : Passive immunity :: Vaccine : -----
15. Master X has the habit of taking pain killers for mild headache. He is advised not to take painkillers frequently by his family doctor. What could be the probable reason.

16. Classify the following drugs into their respective groups (2)
Smack, Hashish, Heroin and Charas
Ans: Opioids and Cannabinoids
15. What do you mean by Red Ribbon Express? (2)
Express train launched by Indian Railways recently to create awareness about AIDS.
This train was taken all over India and stationed at different Junctions.
16. A person suffers from dry, scaly lesions on his skin, nails and scalp which is accompanied by intense itching.
- What is the disease he is suffering from?
 - How would he have contracted the disease?

EACH QUESTION CARRIES 3 MARKS

17. How do drugs cause addiction to a person who consumes them? (3)
18. Immune system has memory component. How does man make use of it to control disease? (3)
19. Classify the following under the four types of barriers in innate immunity.(3)
Interferons
P M N L neutrophils
Saliva in mouth
Acid in Stomach
Mucous coating in Windpipe
Natural killer cells
20. A person has been bitten by a poisonous snake. He is rushed to the doctor for an urgent immune response.(3)
a) What did the doctor immediately do?
b) What kind of immunisation was he provided to get immediate response?
c) Define this kind of immunity.
- 21.. Differentiate between a depressant and a stimulant (3 points) (3)
22. State few very effective measures recently taken by the Ministry of Health to control the use of Cigarette.
- 23.. B-Lymphocytes form humoral immune system. Justify. (3)
Hint: B-lymphocytes – plasma cells – antibodies – circulate in blood (body fluid)
24. Differentiate B Cells and T Cells (3)
25. Distinguish the Primary response and Secondary response. (3)
26. Go through the statements and complete the sequence. (3)
Mosquito bites a healthy human and injects Sporozoites.
Sporozoites reach the a) ----- through b) -----
Reproduces c) ----- burst the cells and release into blood.
Enter the d) -----
Reproduce asexually and release by bursting.
The cell release e) ----- responsible for fever
Some of them form ----- that are picked by mosquito when it bites.
(Refer NCERT text book page 148/Fig 8.1)

27. Explain the mode of action of the following: (3 marks)

- a) Opioids b) Cannabinoids c) Cocaine

CHAPTER: 9
STRATEGIES FOR ENHANCEMENT IN FOOD PRODUCTION
EACH QUESTION CARRIES 1 MARK

1. Disease resistance is obtained through. ----- (1)
 - a. Colchicine treatment
 - b. Crossing with wild variety
 - c. X-ray treatment
 - d. Hormone treatment
2. In a callus culture, rooting can be induced by ----- (1)
 - a. Gibberellins b. Cytokinin c. Auxin d. Ethylene
- 3.. Name the strain of bird flu virus that spread like an epidemic in the recent past. (1)
Ans: H5N1
- 4.. Man made crop Triticale is a hybrid between (1)
 - a) Wheat and Rye*
 - b) Rice and Barley
 - c) Maize and Rye
 - d) Wheat and Rice
- 5.. Bulls semen is stored in. ----- (1)
 - a) Formaldehyde b) Ice c) Liquid nitrogen* d) Alcohol
- 6.. Variations arising during tissue culture are called ----- (1)
Somaclonal variations*

EACH QUESTION CARRIES 2 MARKS

- 7.. High yielding varieties of crops usually provide less fodder. Justify the statement. (2)
- 8.To which product are the following related to (2)
 - a) Green revolution b) White revolution c) Blue revolution d) Silver revolution
9. Following are the steps and aims in the breeding of a new genetic variety of a crop (2)

<u>Step</u>	<u>Aim</u>
1 a. -----	Collection of pre-existing genetic variability
2. Pure line creation	to evaluate and selection as a parents
3. b -----	to combine the desired character of different plants
4. Screening the superior combinant	c. -----
5. Release and commercialization of new cultivars	d. -----

Ans: a. Germ plasm collection b) cross hybridization c) to select and test the hybrid for desired character combination for success of breeding objective d) Obtained hybrid is evaluated in the crop field and is compared with local crop cultivar.

10. Which of the following crop plant is not matching as correct pair (2)

Wheat	-	Himgiri
Brassica	-	Pusa Gaurav
Cauliflower	-	Pusa Shubhra*
Cow-pea	-	Pusa Komal
Chilli	-	Pusa swarnim* (*Answer)

11. Certain genes of the wild plant species of the cultivated crops are inferior and code for low yield but they do have superior genes. Which character are they useful for? (2)

12. Find out the difference between Pisciculture and Aquaculture. (2)

13. Artificial insemination helps us overcome several problems of normal matings. List few of them.(2)

14. Genetic variability is the root of any breeding programme. How can these natural genes (for variations) be exploited for this purpose? (2)

15. A shift from cereal food to meat diet creates more demand for cereals. Why? Explain this in light of food chain. (2)

16. Match the two columns correctly (2)

<u>Species</u>	<u>Biofortified quality</u>
a) Carrot	Enriched Protein
b) Lab lab	Enriched VitaminA
c) Bathua	Enriched Vitamin C
d) Mustard	Iron

17. Which part of the plant is best suited for making Virus free plants and why? (2)

18. Bee keeping near orchards and cultivated crops are often advantageous.

Mention any two advantages.

Each question carries 3 marks each

19. Biofortification can solve the problems of hidden hunger to a large extent. Prove it. (3)

20. SCP has proved to ease the pressure on agriculture and dairy farming. Comment. (3)

21. ----- X ----- (Parent) (3)



- Who are the parents for this Mule?
- Why is this offspring sterile?
- Specify the type of hybridisation involved here.

22. Bikaneri ewes X ----- (3)



- Name the type of Breeding.
- Specify the sex of the parent and state which is superior /Inferior?
- Why is such a cross undertaken?

23. Where is IARI and IIRI situated. Expand the terms. (3)

24. The following are the steps in controlled breeding experiments (3)

a. Semen is collected from Male parent



b. Semen stored or immediately used



c. ↓xxxx



d. Desirable mating achieved.

Qns.1. Complete the sequence by filling xxx.

2. Name the process.

3. What is the advantage?

Ans: 1. Semen is injected into reproductive tract of selected female by breeder

2. Artificial insemination

3. To overcome the problem and low success of normal mating.

25. An animal breeder wants to convert his beef yielding herd into milk yielding herd within a short time.

a. Suggest a technique by which he can produce a number of milk yielding animals.

b. How is this technology an improvement over normal controlled breeding experiments.

CHAPTER 10 : MICROBES IN HUMAN WELFARE
EACH QUESTION CARRIES 1 MARK

1. Name the group of bacteria that are capable to live in high temperatures above 100 C (1)

2. To which class of fungi does Penicillium belong? (1)

3. Which of the steps are related to Nitrogen fixation? (1)

a) N_2 → NH_3

b) N_2 → NO_3

c) N_2 → Amino acid

d) Both a and b

4. Which of the following organisms has Nif Gene? (1)

a) Penicillium b) Rhizobium c) Aspergillus . d) Streptococcus

Ans: b

5. Why is whisky more intoxicating than beer?

EACH QUESTION CARRIES 2 MARKS

6. Biogas plants are more often built in rural areas. Why? (2)

Ans: Cattles are available in plenty & its dung can be used as slurry

7. Why are most of the antibiotics sold in combination with lactobacillus, these days? (2)

8. Recently Chickungunya cases were reported from various parts of the country. Name the vector and pathogen responsible for this disease. (2)

9. In human beings the roughage contains cellulose but in cattles it is not. Why? (2)

10. State whether the BOD is High/Low (2)

a) Water after Primary treatment

b) Water after Secondary treatment

11. A person has suffered a heart attack due to a floating clot in his coronary artery.
- Name the bacterium that can save him.
 - Mention its product and its action.

EACH QUESTION CARRIES 3 MARKS

10. Biocontrol measures are preferred to chemical pesticides. Justify the statement (3)

11. Graphically represent the relationship (3)
- Organic waste with that of BOD
 - Dissolved Oxygen with that of BOD.

Ans: More organic waste the more the BOD/More the Oxygen level less the BOD.

12. Leguminous plants can thrive well in nitrogen deficient soil. Comment.

13. Three water samples namely river water, untreated sewage water and secondary effluent discharged from a sewage treatment plant were subjected to BOD test. The samples were labeled A, B and C. But the lab attendant did not note which was which. The BOD values of A, B and C were recorded as 20 mg/L, 8mg/L and 400mg/L respectively. Which sample of the water is most polluted? Can you assign the correct label to each assuming the river water is relatively clean? (3)

14. Give one example and one use of the following (3)
- Free living fungi
 - Symbiotic fungi
 - Free living bacteria

15. Use of biocontrol measures will greatly reduce our dependence on toxic chemicals and pesticides – Elaborate the idea with examples. (Only three) (3)

16. How is it that the Cry protein produced by *Bacillus thuringiensis* (Bt) does harm the bacteria but only kills the insect larvae? (3)

17. What according to your opinion is the reason for failure of the major programmes like Ganga Action plan or Yamuna action plan? (3)

- Ans:
- Illiteracy of people who fail to cooperate in the programmes
 - Excess of human settlement on the banks of river
 - Large no. of industries on the banks
 - Law enforcing agency fails to exercise their power.
 - Political interference etc.

18. Differentiate Antibodies and antibiotics. (3)

19. How are biofertilizers different from fertilizers such as NPK that we buy in the market? Justify the role of *Rhizobium* as a biofertilizer. (3)

20. Microbes play a dual role when used for sewage treatment, as they not only help to retrieve usable water but also generate fuel. Write in points how this happens. (3)

21. Match the organic acids and the microbial source. (3)

- | | |
|-------------------|----------------|
| i) Citric acid | - Acetobacotor |
| ii) Acetic acid | - Clostridium |
| iii) Butyric acid | - Aspergillus |