

**KALYANI MAHAVIDYALAYA
CITY CENTRE COMPLEX, KALYANI, NADIA
TEST EXAMINATION 2016
DEPARTMENT OF MICROBIOLOGY
PAPER VII**

F.M: 50

Time: 2 hrs

(Use separate sheet for different groups)

GROUP A

I. Answer any five:

(5X2)

- a. How cloning is done in Ti plasmid?
- b. What is phagemid?
- c. What is the function of polylinker?
- d. What is the function of polynucleotide kinase?
- e. What is nick translation?
- f. What is the difference between insertion and replacement vector?

II. Answer any three:

(3X5)

- a. Write a short note on development of BT crops.
- b. Describe the process of southern blot.
- c. Write about two processes of introduction of foreign DNA.
- d. What do you mean by shuttle vector? Differentiate between YIp and YRp.

GROUP B

I. Answer any ten questions

(10X1)

- a. Define corn steep liquor?
- b. State properties of industrially useful microorganisms.
- c. What is fermentation scale up process?
- d. What is bio-transformation?
- e. Schematically represent purification of antibiotics.
- f. What is the causative agent of Salmonellosis?
- g. Name one organism for yoghurt production.
- h. What is probiotics?
- i. What is MAP?
- j. What is the importance of cheese ripening?
- k. What is GRAS?
- l. What are the uses of Botox?

II. Answer any three questions

(5X3)

- a. Define immobilized enzyme. State the procedures for immobilizing enzymes.
- b. Describe the process of cheese ripening. What are the different types of cheese available?
- c. What is the causative agent of Botulism? write a short note on pathogenesis.
- d. Distinguish between: a) chemical preservatives and food additives b) food borne intoxication and food borne infection.

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Time: 2 hrs

**(Use separate sheet for different groups)
GROUP A**

I. Answer any ten questions: (10X1)

- a. How does Nalidixic acid act as an anti microbial agent?
- b. Write the beneficial aspect of disease forecasting.
- c. How herd immunity can be diminished?
- d. What is disease cycle?
- e. Which chemical is used for preparing toxoid?
- f. What is antigenic drift?
- g. What is Viremia?
- h. What is antibiotic assay?
- i. How dermatitis is treated?
- j. How sylvatic cycle spread plague?
- k. What is Trismus?

II. Answer any three: (5X3)

- a. Describe Interaction between T-lymphocytes and HIV virus. Differentiate between antigenic shift and antigenic drift
- b. Distinguish between syndrome and symptoms. How do normal microbiota of human Body differ from transient microbiota?
- c. Contrast communicable and contagious disease. How does Cholera toxin act on host (explain only with proper scientific diagram)?
- d. What is the causative organism of tuberculosis? Why they are called latent microbes?

GROUP B

I. Answer any ten: (10X1)

1. Immune recognition is remarkable for its -----.

2. The immune system is able to recognize subtle chemical differences that distinguish one foreign pathogen from another(T/F).
3. Exposure to the same foreign organism induces a -----.
4. pH of the gastric juice inhibit -----.
5. MHC stands for -----
6. The acquired immune system can discriminate between self and non-self and act there upon. (T/F)
7. In birds, the maturation of the B cells takes place in the.....
8. T helper (TH) cells, recognized by the presence of -----.
9. Antigen presenting cells (APC) include--- dendritic cells/ T cell/ Neutrophil.
10. MHC class I is recognized by--- Tc cells/ Th cells/ B cells.
11. Lipids and nucleic acids of an infectious agent generally do not serve as-----.
12. The degree of its immunogenicity depends on the degree of its foreignness(T/F).
13. ----- present on trophoblast of placenta and prevent recognition of fetus as foreign.

III. Answer any five: (2X5)

1. What is Hapten?
2. How do tolerance develop?
3. What is Class switching of Antibody molecule?
4. What is Epitope?
5. Compare allotype and Isotype.
6. What is opsonization?
7. Why do MHC genes are called Haplotype?

IV. Answer any one: (1X5)

1. How do CTLs Kill Cells?
2. What is primary Immune Response? What are the fate of Memory cells? 3+2
3. Describe class I MHC-peptide interaction

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PAPER IX**

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Time: 2 hrs

(Use separate sheet for different groups)

GROUP A

I. Answer all the questions: (6X1)

- a. What is VAM?
- b. Name one Cyanobacterium which is used as bifertilizer?
- c. Write the full form of PGPR.
- d. What is phylloplane?
- e. What is denitrification?
- f. Name one organism found in extreme saline condition.
- g. Name one microbe responsible for rotting leather.

II. Answer any seven of the following: (7X2)

- a. What is rhizosphere effect?
- b. What is Bacteroides?
- c. Name two Bacteria that control insects.
- d. How soil microbes interact with synthetic pesticides?
- e. Write down the usefulness of entomopathogenic fungi.
- f. Write down the importance of nod and nif gene.
- g. Point out the role of mycorrhizae in agriculture and forestry.
- h. Explain N-mineralization and N-immobilization.

III. Write down short notes on (2.5×4)

- a) Sulfur cycle
- b) Siderophore
- c) Mycorrhizal biofertilizer
- d) Phosphate Solubilization

GROUP B

I. Answer the following: (2X5)

- a. What do you mean by rhizosphere and rhizoplane
- b. Name one microbe each for phosphate utilization and Siderophore production.
- c. How *Anabaena azollae* utilized as biofertilizer?
- d. What is ecorestoration?
- e. What is bioterrorism?

II. Answer the following: (5X2)

- a. How bioremediation of heavy metals and hydrocarbons are done from environment?
- b. Write a short note on use of VAM in agriculture. Write a name of entomopathogenic fungi.