Code No: RR412306 **Set No.1**

IV B.Tech. I Semester Regular Examinations, November -2005
MOLECULAR PATHOGENESIS
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Name any eukaryotic pathogen which is more prevalent in India. Describe its life cycle.

   (b) Match the followings:

A	B
Gonnorhea	pasteurella pestis
Q-fever	Culex sp.
plague	Lutzomia
Filariasis	Nisseria sp.
Leishmaniasis	Rickettrial
Gas gangrin	chlostritium welchii
Ronalt Ross	plasmoum
-	Tryparisoma
-	Borfetella sp.

2. (a) Explain the different types of immunoglobulin and their roles-

   (b) Answer the followings:

   i. Which Ig is involved in allergen reaction.
   ii. Which Ig can cross the placenta.
   iii. Name the membrane found and secretary immunoglobulin.
   iv. Which Ig is produced on first exposure to infection?
   v. Which Ig class has high avifity for antigens?

3. (a) How would you differentiate different cells of immune system under microscope?

   (b) Differentiate between.

   i. Mϕ and dentritic cells.
   ii. Mast cells and Basophills.
   iii. Naive , effector and memory cells.
   iv. 1^o , 2^o ,3^o lynphoid organs.

4. (a) What are interferon?

   (b) How does vaccination enhance the immune system?

   (c) How is the initial dose (titre) of any vaccine determined?

5. (a) Differentiate between precipitation and agglutination

(b) What is bacterial agglutination reaction and how is agglutinin titre determined.

(c) What is immunodiffusion ? Explain different types of immunodiffusion.

6. (a) Explain the different pathway of complement activation.

(b) Which of the following is more efficient to activate the complement system.

i. Ig G
ii. Ig M
iii. Ig D
iv. Ig A
v. Ig E.

7. (a) Explain the followings:

i. Epidemic
ii. Endemic
iii. Pandemic
iv. Nosocomial

(b) What is an opportunistic infection? Why are most fungal infections opportunistic?

8. Briefly describe the pathogenesis of trypanoma pallidum.

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Code No: RR412306 **Set No.2**

IV B.Tech. I Semester Regular Examinations, November -2005
MOLECULAR PATHOGENESIS
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) Why Hardy weinberg law is not applicable for microbial population genetics?
   (b) What is infections dose ? Why does it vary among different host?
2. (a) Explain any four
      i. Immuno competency
      ii. Immuno survillence.
      iii. Clonal selection
      iv. clonal deletion
      v. Acute phase protein
      vi. 1^o and 2^o lymphoid organ.
   (b) Why do individuals carrying A blood group possess anti B antibody in their sera, even though they do not have any prior exposure to B antigens?
3. (a) Draw the labelled diagram of antibody
   (b) Explain the experiment used to ellucidate the structure of antibody.
   (c) Explain the followings.
      i. F_c region
      ii. Fab
      iii. $F(ab)_2$
4. (a) What is superantigen ? How does it act?
   (b) Explain diapedisis. How is it regulated?
5. (a) What is complement mediated lyris? Explain.
   (b) Explain Antibody dependent cell mediated Cytotoxicity.
6. (a) What is inflammation ? What are the different components of inflammation? Explain their role.
   (b) What is the difference between salk and sabin pollio vaccines?
   (c) What are the different phases to test a potential vaccine?
7. (a) Distinguish between diarrhoea & dysentry.
   (b) Explain the formation of gas gangrin. Which organism is responsible for this?.
8. (a) What organism causes duodenal ulcer? Describe its epidemiology.

(b) Explain the mode of action of following:

i. Penicillin
ii. Rifampicin
iii. Methotrexate
iv. Tetracyclin.

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Code No: RR412306 **Set No.3**

IV B.Tech. I Semester Regular Examinations, November -2005
MOLECULAR PATHOGENESIS
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the methods to detect genetic diversity in microbial pathogens?
   (b) If you come across a new strain of pathogen, how will you classify it. [16]
2. (a) Differentiate between innate and adaptive immunity. Explain the ocmponents involved in each of them.
   (b) What is opsonization? What is its role in immunity? [16]
3. (a) Explain haptens, adjuvant and carrier molecules.
   (b) Why is it not possibel to develop vaccines against most of the parasites and viruses? [16]
4. (a) Define attenuation
   (b) Distinguish between antigen and immunogen. Explain the latest method of production of hepatitis B vaccines.
   (c) What are different routes of vaccincations and which one is preferred over other? [16]
5. (a) What are the different mechnisms adopted by the physiological barriers involved in immune system? Explain.
   (b) Different between epitope and paratope. [16]
6. (a) Explain different types of hypersenstivity.
   (b) Explain schematically the production of monoclonal ab. [16]
7. Explain the mode of action of following:
   (a) Diptheria toxins
   (b) Tetanus toxins
   (c) Botulin toxins
   (d) Cholera toxins [16]
8. Name two mycobacterial pathogen causing human diseases and explain their pathogenesis briefly. [16]

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Code No: RR412306 **Set No.4**

IV B.Tech. I Semester Regular Examinations, November -2005
MOLECULAR PATHOGENESIS
(Bio-Technology)

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What are the different components of microorganisms involved in disease causation?
   (b) If you managed to isolate the same strains of bacteria form two different individuals, but only one of them was displaying the symptom of disease. What could be the possible reason for this? [16]

2. (a) Differentiate between phagocytosis and receptor mediated entocytosis. Which one is more important in establishing innate immunity?
   (b) Match the following: [16]

A	B
Paul Ehrlich	Antitoxins
Elie Metchnikoff	immune response
E. van Behring	Cell mediated
Neiln Jerne	Immunosurvillence
Peter Metawar	Clonal selection theory
	Side chain theory

3. Differentiate between
   (a) Affinity and avidity
   (b) Noive and memory T cells
   (c) Monoclonal and polyclonal antibody
   (d) Epitope and paratope. [16]

4. (a) Different between
      i. Freund's complete and incomplete adjuvants
      ii. Invitro and invivo experimental model
   (b) Explain the need of booster done in vaccination. What are facors affecting the time gap between two doses. [16]

5. (a) Differentiate between passive and active immunization.
   (b) Differentiate between antivenin and toxoid.
   (c) Explain latency of infection. How does it break. [16]

6. (a) Explain schematically teh invasion by a bacteria and steps taken by the immune system to control it.

(b) What arethe different steps adopted by the microorganisms to evade the immune response. [16]

7. (a) Differentiate between less invasive-highly infectious and highly invasive-less infectious organisms.

   (b) What are the mode of action of following drungs:

   i. Nallidyxic acid
   ii. Chloroampheric ol
   iii. Kanamycin
   iv. Amphotericin B
   v. Cyclohexamite [16]

8. Explain the pathogenesis of glomerulo nephritis and Rheumatic fever. [16]

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