

2013

**MEDICAL MICROBIOLOGY**

*Time Allotted : 3 Hours*

*Full Marks : 70*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words*

*as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *ten* of the following

questions :

10 × 1 = 10

i) Ability of pathogen to establish infection is called

a) Infectivity b) Prevalence

c) Toxigenicity d) Virulence.

ii) Typical bacterial pathogen that act extracellularly is

a) *Vibrio cholerae* b) *Chlamydia*

c) *Salmonella* sp d) *S. aureus*.

iii) Some intracellular parasites which are so highly evolved

that they cannot survive at all outside their host's cells

are

a) *Rickettsia* b) *Pseudomonas* sp

c) *Salmonella* sp d) *S. aureus*.

iv) ..... indicates the presence of the organism

without clinical or subclinical disease.

a) Colonization b) Infection

c) Pathogenesis d) Morbidity.

v) Negri bodies are produced in the

a) nerve cells b) liver cells

- c) intestine d) blood.
- vi) *Pseudomonas aeruginosa* causes
- a) throat infection b) eye infection
- c) peptic ulcer d) none of these.
- vii) Norwalk agent is
- a) bacteria b) protozoa
- c) virus d) archea.
- viii) Black Death is caused by
- a) Rotovirus b) *Salmonella typhi*
- c) *Yersinia protis* d) all of these.
- ix) AZT is an analogue of
- a) Adenine b) Guanine
- c) Thymine d) Thymidine.
- x) ..... is a bacterium that can only live in the human bloodstream or intestinal tract.
- a) *S. aureus* b) *Salmonella typhi*
- c) *Vibrio cholerae* d) *Chlamydia*.
- xi) Tetracycline is the usual antibiotic of choice for
- a) Cholera b) TB
- c) AIDS d) Amoebiasis.
- xii) *Neisseria gonorrhoea* is inhibited by
- a) Ofloxacin b) Tetracycline
- c) Penicillin d) Lotrimin.
- xiii) Toxin which act on the extracellular matrix of connective tissue is
- a) collagenase b) tetanolysin
- c) cholera toxin d) M. protein.
- xiv) Which is a Gram-negative, microaerophilic bacterium

that can inhabit various areas of the stomach and duodenum ?

a) *Bacillus* b) *Streptococcus*

c) *Helicobacter pylori* d) *S.mutans*.

xv) Nosocomial infections is predominantly caused by

a) *Bacillus* b) *Streptococcus*

c) *Pseudomonas* d) *S.mutans*.

xvi) Toxic shock syndrome is caused by

a) *Staphylococcus* b) *Streptococcus*

c) *Listeria* d) *Bacillus*.

### **GROUP – B**

#### **( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. What do you mean by zoonosis ? Name two zoonotic diseases. Write in brief the mode of transmission of plague and its prevention. 1 + 1 + 3

3. Write about the normal microbiota of skin and respiratory tract. 2.5+2.5

24. What is toxic shock syndrome ? Name the causative organism for toxic shock syndrome. What are the symptoms for toxic shock syndrome ? 1 + 1 + 3

5. What do you mean by MIC (Minimum Inhibitory Count) ? Differentiate MIC from LD<sub>50</sub>. Describe how the MIC of an antibacterial agent is determined. 1 + 2 + 2

6. Classify toxins produced by pathogenic bacteria. Write in brief about endotoxins. 2 + 3

### **GROUP – C**

#### **( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. Write short notes on any *three* of the following :  $3 \times 5$

- a) Cyclic polypeptide antibiotic
  - b) Isonicotinic hydrazide and Nalidixic acid
  - c) Actinomycetes used in chemotherapy
  - d) Colonization of growth of bacteria during infection.
8. a) Distinguish between pathogenicity and virulence.
- b) Discuss the bacterial component needed for host attachment during infection.
  - c) State the current epidemics of acute respiratory syndrome.
  - d) Why does bacterial infection not occur on eyes ?
  - e) Name one virus that causes common cold.

$3 + 6 + 3 + 2 + 1$

9. a) Describe the structure and mode of action of cholera toxin with proper diagram.

- b) Also mention the mode of action of tetanus toxin.
- c) Identify five mechanisms responsible for antibiotic resistance.  $5 + 5 + 5$

10. a) What are the causative agents of malaria, plague, rabies and typhoid ?

- b) Write the mode of action of malaria along with the symptoms.
- c) Write the organisms and etiology of gastric ulcer.

$4 + 6 + 5$

11. a) Write causative agent, symptoms and preventive measures of leprosy and tuberculosis.

- b) Name the pathogen of diphtheria and whooping cough.

c) Name three normal microbial floras in the upper respiratory tract. 10 + 2 + 3

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