

PARUL UNIVERSITY
FACULTY OF MEDICINE
M.B.B.S Year 2, Examination December 2021

Year: 2

Subject Code: 19100283

(New Course)

Date: 01-01-2022

Time: 10:00 am to 1:00pm

Subject Name: Microbiology- I

Total Marks: 100

Instructions:

1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write section-A, section-B, and section-C on separate answer sheets.

Section A

Q. 1 Long answer Questions. (Answer any two)**2x10=20**

- A.** A 60 year old man was admitted with fever, purulent productive cough, pain in chest, difficulty in breathing since past two days. Gram stain of sputum showed Gram positive diplococci.
- 1) What is the clinical diagnosis?
 - 2) How is the sample collected?
 - 3) How is this condition diagnosed in the lab?
- B.** A 45-year-old man had a history of fever with difficulty in breathing since past two to three days. He has cough and tiredness. History of travel Kerala recently.
- 1) What is your provisional diagnosis?
 - 2) Write in details how the laboratory diagnosis of this condition is done.
- C.** A 3 year old child came in emergency with high grade fever, difficulty in breathing. His throat was severely inflamed and a thick membrane is seen over tonsillar area.
- 1) What is your provisional diagnosis?
 - 2) How this condition is diagnosed in the laboratory.
 - 3) What will be the likely findings in the stained smear of throat swab?

Q 2 Short Notes. (Answer any three)**3x5=15**

- a. What are the methods of sterilization using gases?
- b. Role of plasmids in bacterial drug resistance.
- c. Describe bacterial cell wall. How is it important in antibiotic therapy?
- d. What is the role of HICC in control of hospital acquired infections

Section B

Q. 3 Long Essay Questions. (Any two out of three)

2x10=20

A. A 25 year old patient was admitted to hospital with abdominal discomfort for past 5 days. She had fever. On examination she was toxic with temperature 101F, tongue was coated and mild splenomegaly was present. Enteric fever was suspected.

- a) What is the etiologic agent in enteric fever?
- b) Comment on sample collection depending on the duration of illness.
- c) Describe laboratory diagnosis of enteric fever.

B. A middle aged man gave history of low grade fever with chills, loss of appetite and tiredness. On examination there was icterus.

- a) Enumerate viruses causing Viral hepatitis and their route of infection.
- b) What are the serological markers of hepatitis B
- c) What is the sequel of chronic HBV infection?

C. A patient came to the OPD with high grade fever. Fever was intermittent and with chills and rigors. Malaria was suspected.

- a) Name species of malarial parasite.
- b) Describe various forms of the parasite seen in blood smear and draw diagrams
- c) Write differential microscopic features of *P. vivax* and *P. falciparum*.

Q. 4 Short notes: (Answer any three)

3x5=15

- 1) IgA
- 2) Passive immunity
- 3) Secondary immune response and role of B lymphocytes.
- 4) NK cells

Section C

Q. 5 Answer in brief. (Answer any Ten)

10x2=20

- a. Microaerophilic bacteria.
- b. Red waste disposable bag and its contents.
- c. Enlist vaccines against bacteria
- d. Hapten
- e. Immunological tolerance
- f. Tropical pulmonary eosinophilia
- g. Antigenic shift and drift
- h. What is horizontal transmission? Give one example.
- i. Mantoux test
- j. Influenza A vaccine
- k. High level disinfectants

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SECTION - C

Q. 6 MCQs. (Answer all questions)

10x1=10

1. Generation time of *Mycobacterium tuberculosis* is about
 - (a) 20 seconds
 - (b) 20 minutes
 - (c) 20 hours
 - (d) 20 days
2. Steam Sterilization at 100⁰ C for 20 minutes on the three successive days is known as
 - (a) Tyndallisation
 - (b) Inspissation
 - (c) Pasteurization
 - (d) Incineration
3. Which of the following specimen is the most important for diagnosis of carriers in Typhoid
 - (a) Blood
 - (b) Faeces
 - (c) Urine
 - (d) Bile
4. The cheapest & most widely used disinfectant for HIV infected material is
 - (a) Hypochlorite solution
 - (b) Lysol
 - (c) Formaldehyde
 - (d) Mercuric chloride
5. An epitope is
 - (a) B-cell
 - (b) A hapten.
 - (c) An antibody.
 - (d) The antigen determinant site.
6. An immunoglobulin is a
 - (a) Carbohydrate.
 - (b) Fatty acid.
 - (c) Glycoprotein.
 - (d) Protein.
7. Naturally acquired active immunity is acquired through which of the following processes?
 - (a) Vaccination
 - (b) Drinking colostrum
 - (c) By birth
 - (d) Infection with disease causing organism followed by recovery.
8. Contact dermatitis is which type of Hypersensitivity?
 - (a) Type I
 - (b) Type II
 - (c) Type III
 - (d) Type IV
9. All are mosquito borne except:
 - (a) Dengue fever
 - (b) Chikungunya
 - (c) Yellow fever
 - (d) Leptospirosis
10. Stains used in staining malarial parasites are all **except**
 - (a) Leishman stain
 - (b) Fields stain
 - (c) Giemsa stain
 - (d) Albert stain