

## M.B.B.S. 2<sup>nd</sup> Prof.

(New Scheme w.e.f. 2019 admission onwards)

BF/2022/06

### Microbiology – A

M.M. : 100

Time : 3 Hours(First 30 Min. for MCQs)

- Note:
1. **Use OMR Sheet to answer Multiple Choice Questions(MCQs).**
  2. Attempt all questions. Illustrate your answers with suitable diagrams
  3. **NO SUPPLEMENTARY SHEET SHALL BE ALLOWED/PROVIDED**
  4. **The student must write O.P. Code in the space provided on OMR Sheet and the Title page of the Answer Book.**

Q.1 MCQs (Attempt on OMR sheet)

[1x20]

1. The father of antiseptic surgery is
  - a. Louis Pasteur
  - b. Robert Koch
  - c. Julius Petri
  - d. Joseph Lister
2. An eighty year old man presented with a 2month history of low grade fever and facial swelling. He is a known diabetic and has long standing hypertension. Echocardiography has revealed vegetations on the implanted Valve. The likely diagnosis is
  - a. Infective endocarditis
  - b. Mitral stenosis
  - c. Septal defect
  - d. Pericarditis
3. A 15-year-old girl develops severe watery diarrhea. The stool looks like “rice water.” It is voluminous—more than 1 L in the last 90 minutes. She has no fever and seems otherwise normal except for the effects of loss of fluid and electrolytes. Which of the following is the most likely cause of her illness?
  - a. Staphylococcal enterotoxin
  - b. Cholera Toxin -A toxin with A and B subunits
  - c. Shigella dysenteriae type 1 that produces Shiga toxin
  - d. Enterotoxigenic E coli that produces heat-labile and heatstable toxins
4. One of the widely used method of sterilization method in a hospital is autoclaving. The holding time in autoclave for sterilization at 121°C(15psi) is
  - a. 5 minutes
  - b. 10 minutes
  - c. 15 minutes
  - d. 20 minute
5. Disinfection refers to the process that destroys or removes most pathogenic organism. Which of the following are capable of killing bacterial spores?
  - a. Antiseptics
  - b. High level disinfectants
  - c. Intermediate level disinfectants
  - d. Low level disinfectants
6. Antimicrobial therapy can decrease the amount of susceptible bowel flora and allow proliferation of relatively resistant colonic bacteria. Which one of the following species can proliferate and produce a toxin that causes diarrhea?
  - a. Enterococcus species
  - b. Staphylococcus epidermidis
  - c. Pseudomonas aeruginosa
  - d. Clostridium difficile
7. Solid media containing inhibitory substances that inhibit normal flora in the specimen and allow pathogens to grow are called:
  - a. Enriched media
  - b. Selective media
  - c. Differential media
  - d. Basal media
8. Fifty five year old man was on renal dialysis for the last five years. Recently, he received a renal transplant from his brother. All functions remained normal for two weeks after the transplantation. But after that, tenderness appeared at the operative site, creatinine levels rose and the renal biopsy revealed increased lymphocytic infiltrates in the renal cortical region. What type of clinical graft rejection has occurred in this case?
  - a. acute rejection
  - b. Hyperacute rejection
  - c. Chronic rejection
  - d. None of the above



An army Jawan, presented to a tertiary care center with low grade fever, weakness and generalized lymphadenopathy of 5 weeks duration. Detailed history revealed visits to hilly region of Srinagar, where he consumed raw goat milk. Routine investigations; as Widal test, Rheumatoid factor, Paul Bunnell test, and whole body CT scan did not yield any clue. Blood culture revealed gram negative bacilli, after 6 days of incubation. Liver biopsy showed non-caseating granulomas. The likely diagnosis is

- a. Brucellosis
- b. Tularensis
- c. Salmonellosis
- d. Epidemic Typhus

20. A six year old male presented to the paediatric OPD with picture of significant weight loss. The stool was greasy and foul smelling. The mother on further questioning informed that the stool used to float in the Western toilet. Microscopic examination revealed pear shaped trophozoites (14µm in length). The likely diagnosis is

- a. Giardia infection
- b. Amebic infection
- c. Cryptosporidial infection
- d. Free living amebic infection

Q.2. A 32 years male truck driver reported to OPD with creamy white patches in oral cavity extensively distributed on tongue and mucosa for two weeks. Physical examination revealed generalized lymphadenopathy. There is history of frequent sexual exposure with multiple sex partners. Gram staining of scrapings from patches revealed numerous gram positive oval budding yeast cells. Provisional clinical diagnosis is suspected as HIV infection. [4+4+2+2]

- a. Enumerate specific tests and nonspecific immunological tests for laboratory diagnosis of HIV.
- b. Enumerate the NACO strategies including plan/algorithms for HIV testing in developing/poor countries.
- c. Draw a labeled diagram of HIV
- d. List important opportunistic infections in HIV infected patient

Q.3. **Write short notes on:-** [5x4]

- a. Differences between primary immune response and secondary immune response
- b. Secretory immunity
- c. Bacterial nucleus
- d. Principle of hot air oven and list four articles that are routinely sterilized in it

Q.4. **Explain in short:-** [3x5]

- a. Agglutination reaction
- b. Type-III hypersensitivity reaction
- c. Hepatitis A
- d. Amoebic liver abscess
- e. Peripheral smear examination for malarial parasite

Q.5. **Short answers (applied aspects):-** [6x3]

- a. Diarrheagenic Escherichia coli
- b. Bacterial growth curve
- c. Describe pathogenesis of dengue hemorrhage fever. How will you diagnose dengue hemorrhage fever in the laboratory?

Q.6. **Write in brief about: -** [5x3]

- a. Father of bacteriology
- b. RT-PCR for Covid-19 testing
- c. Your personal attributes and attitude while dealing with the patients reporting to microbiology laboratory

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