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The West Bengal University of Health Sciences
B.Sc. in Medical Microbiology 6th Semester
September-October, 2026 Examination

Subject : Diagnostic Microbiology

Time : 2 hrs.

Full Marks : 50

Attempt all questions

10 x 1

1. Tick the correct answer :

- a) Immunohistochemistry is to detect:
i) localization of antigen in cell ☒ ii) localization of antigen in tissue
iii) localization of antigen in whole organ ☐ iii) none of these.
- b) This is commonly used as blocking agent in Western Blotting:
i) Tris-buffer ☒ ii) Fat free milk protein ☐ iii) PBS buffer ☐ iv) Normal saline.
- c) Passive immunization can be done by:
i) serotherapy ☐ ii) vaccination ☐ iii) toxoid exposure ☐ iv) infection.
- d) AFB staining is essential to detect:
i) influenza ☐ ii) malaria ☐ iii) tuberculosis ☐ iv) cholera.
- e) This is not the application of FACS:
i) Detection of HIV infection ☐ ii) CD4+ T-cell sorting ☐
iii) Visualization of HIV infection ☐ iv) Tuberculosis detection ☐
- f) This is the most fatal form of malaria:
i) Plasmodium vivax ☐ ii) Plasmodium falciparum ☐
iii) Plasmodium malariae ☐ iv) Plasmodium ovale ☐
- g) Sandwich ELISA can be performed to detect the antigen having the property:
i) any univalent antigen ☐ ii) any multivalent antigen ☐
iii) multideterminant antigen ☐ iv) all of these ☐
- h) DOT therapy is applicable to control this disease:
i) Malaria ☐ ii) Tuberculosis ☐ iii) Leishmania ☐ iv) Meningitis ☐
- i) This is the symptoms as a side effect of vaccination:
i) Headache ☐ ii) Inflammation ☐ iii) Fainting ☐ iv) All of these ☐
- j) Giardiasis can be diagnosed by analysis of this sample:
i) Urine ☐ ii) Feces ☐ iii) Blood ☐ iv) CSF. ☐

2. Answer **any four** of the following questions.

4 x 2

- a) Enumerate two server name by which epitope design can be done.
- b) Chimeric vaccine can be classified as which type of vaccine?
- ☒ c) What is DPT vaccine?
- ☒ d) Why is indirect fluorescence better than the direct fluorescence?
- e) What is malaria pigment?
- ☒ f) Name the serological test for the syphilis.

3. Answer **any four** of the following questions.

4 x 4

- a) Discuss the drugs which are available to treat the malaria.
- ☒ b) Make a note on pathogenesis of Leishmania donovani.
- ☒ c) Discuss the side effects of immunization.
- d) How will you develop a peptide-based vaccine using immunoinformatics?
- ☒ e) What is antigen retrieval? Discuss the methods to do this?
- ☒ f) Write a short note on FACS.

1+3

4. Answer **any two** of the following questions.

2 x 8

- a) Define vaccine. Write the properties of active immunization. Briefly write a note on Nucleic acid vaccine.
- ☒ b) Write the principle, procedure and applications of Sandwich ELISA.
- ☒ c) What is Mantoux test? Describe the pathogenesis of tuberculosis.

2+2+4

2+4+2

2+6