R7316	Sub. Code
	530301

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022.

Third Semester

Microbiology

MEDICAL MICROBIOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Write the safety in containment laboratory.

2. Differentiate the blood culture from bile culture.

3. What is Mantoux test?

4. Define Weils's disease.

5. Write the causative agent and transmission of Gonococci.

6. Differentiate the growth requirement of *Mycoplasma* and *Ureaplasma*.

7. Differentiate the candidiasis from crptococcusis.

8. List-antihelminthic drugs for ascariasis.

9. What is Nosocomial infection?

10. Write the transmission of Chikungunya Virus infection.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) What is Normal flora? Briefly write note on normal flora in human body.

Or

(b) Give an account on collection, transport and disposal management of blood and faeces specimen.

12. (a) Describe the pathogenesis and laboratory diagnosis of tetanus.

Or

(b) Give an account on virulence factors and diseases caused by *Staphylococcus aureus.*

13. (a) Write a short note on diagnosis and treatment of Enteric fever.

Or

(b) Discuss in detail about the pathogenicity, transmission and diagnosis of Leptospirosis.

14. (a) Briefly describe the pathogenesis and diagnosis of *Entamoeba histolytica.*

Or

(b) What is systemic mycosis? Explain pathogenesis and laboratory diagnosis of Histoplasmycosis and Blastomycosis.

15. (a) Explain the mode of action and therapeutic applications of antifungal drugs.

Or

(b) What are emerging and re-emerging diseases? Write a note on Zika and Ebola viral diseases.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain the virulence factors and infections caused by Group A Streptococci.

17. Explain the serodiagnosis and molecular diagnosis of sexually transmitted diseases.

18. What is Cholera? Briefly describe pathogenesis and lab diagnosis of *Vibrio* infection

19. Discuss the pathogenesis and laboratory diagnosis of *Plasmodium sp.*

20. Define Hepatitis. Describe the transmission and control of Hepatitis.

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R7317	Sub. Code
	530302

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022.

Third Semester

Microbiology

IMMUNOBIOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

All questions carry equal marks.

1. PRRs.
2. Dendritic cells.
3. Idiotypes.
4. Fab.
5. MAC.
6. SLE.
7. Give some examples of subunit vaccines.
8. Squalene.
9. TNF-α.
10. DAPI.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Classify immunity and discuss on active immunity with examples.

Or

(b) How innate immunity play a role in human protection?

12. (a) Explain the characteristics features of an antigen.

Or

(b) Discuss on structure and functions of secretary Ig A.

13. (a) Illustrate the hemolytic disease of the new born.

Or

(b) Give brief notes on anaphylaxis reaction.

14. (a) Describe the mechanism of viral immunity.

Or

(b) Discuss on the role of immunoinformation in human health.

15. (a) Explain the process of immunodiffusion.

Or

(b) Explain the characteristics and functions of flow cytometry.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Discuss on the cells of immune system.

17. Schematically explain the structure and functions of IgG and IgM.

18. Describe on the autoimmune diseases.

19. Explain about the synthetic and DNA vaccines.

20. Discuss on the structure and detection of MHC molecules.

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R7318	Sub. Code
	530303

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022.

Third Semester

Microbiology

INDUSTRIAL MICROBIOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. What is liquid nitrogen storage?

2. Differentiate the solid state and submerged aerobic fermentation.

3. What is disposab1e wave bioreactor?

4. What are Hops?

5. What are the properties of bioreactor construction material?

6. Write the microbial transformation of alcohol to acetic acid.

7. Name the antifoaming agents.

8. What are the uses algal SCP?

9. Write role of Ion exchange chromatography in downstream processing.

10. Define spray drying.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Briefly write note on strain improvement by protoplast fusion.

Or

(b) How do you preserve the industrially important microorganisms?

12. (a) Describe the principle and applications of continuous stirred tank fermenter.

Or

(b) Describe the monitoring and control devises in bioreactor.

13. (a) What is production media? Describe the raw materials used in fermentation medium formulation.

Or

(b) Compare the batch fermentation from continuous fermentation.

14. (a) Write a note on production of Vitamin B12.

Or

(b) What is red wine? Discuss the industrial production of wine.

15. (a) Discuss the role of solvent recovery process in downstream process.

Or

(b) Briefly describe the filtration methods in downstream process.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. What is strain improvement? Describe strain improvement by metabolic regulation.

17. What is fermenter? Illustrate the design, aeration and agitation system in fermenter with neat sketch.

18. Explain the cell and enzyme immobilization methods.

19. Describe the commercial production of Penicillin G.

20. Outline steps in downstream process and describe the cell disruption methods.

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R7319	Sub. Code
	530506

M.Sc. DEGREE EXAMINATION, NOVEMBER – 2022.

Third Semester

Microbiology

MICROBIAL TECHNOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** the questions.

1. Salinity
2. Viruses
3. Sterilization
4. Endotoxin
5. Chemical preservative with example
6. HACCP
7. Biological Hazards
8. Gel clot assay
9. ATP estimation
10. LAL Test

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the stages of mineral water quality assessment.

Or

(b) Give an account on water quality analysis.

12. (a) Write a short note on role of preservatives.

Or

(b) Give a brief note on sterilization validation process.

13. (a) Explain about endotoxin test methods.

Or

(b) Give an account on depyrogenation methods.

14. (a) Explain - Advantages and limitations of light pulses.

Or

(b) Give an account on risk assessment in food industry.

15. (a) Explain significance of barcoding and its uses.

Or

(b) Give an account on marline food products

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the process of determination of microbial load in water.

17. Briefly describe about chemical preservative's role in food processing.

18. Explain in detail about biological assays.

19. Briefly describe quality control in fruits and vegetables.

20. Explain about food safety and standard act for food adulteration.

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