XII – Microbiology

Part – I (15 x 1 = 15)

1. (c) Both (a) and (b)
2. (c) 1-(iii), 2 – (i), 3 – (iv), 4 – (ii)
3. (b) Alcohol
4. (a) Quaternary ammonium Salt
5. (b) Apoenzyme + cofactor = Holoenzyme
6. (d) 80 – 85%
7. (a) Drying
8. (b) Neisseria meningitides
9. (d) Raymond Jacques Sabouraud
10. (c) Candida albicans
11. (b) Definite host
12. (a) Kala - Azar
13. (b) Assertion (A) is true, Reason (R) is false.
14. (a) Methionine
15. (d) IgG and IgM

Part – II

16. Applications of Nanoparticles. (Any 4) (4 x ½ = 2)
    1. Drug carriers for targeted delivery
    2. Cancer Treatment
    3. Gene therapy and DNA Analysis
    4. Antibacterial agents
    5. Biosensors
    6. Enhancing reaction rates
    7. Separation science
    8. MRI
17. Types of Electron Microscope. (2 x 1 = 2)
    1. Transmission electron microscope (TEM)
    2. Scanning electron microscope (SEM)
    3. Scanning Transmission electron microscope (STEM)
18. Antibiotic
    - Produced by microorganisms.
    - Kill or inhibit the growth of other microbes (2)

    Eg : Penicillin, Streptomycin (1)

19. Glycolysis (2)

Oxidation of glucose to pyruvic acid.

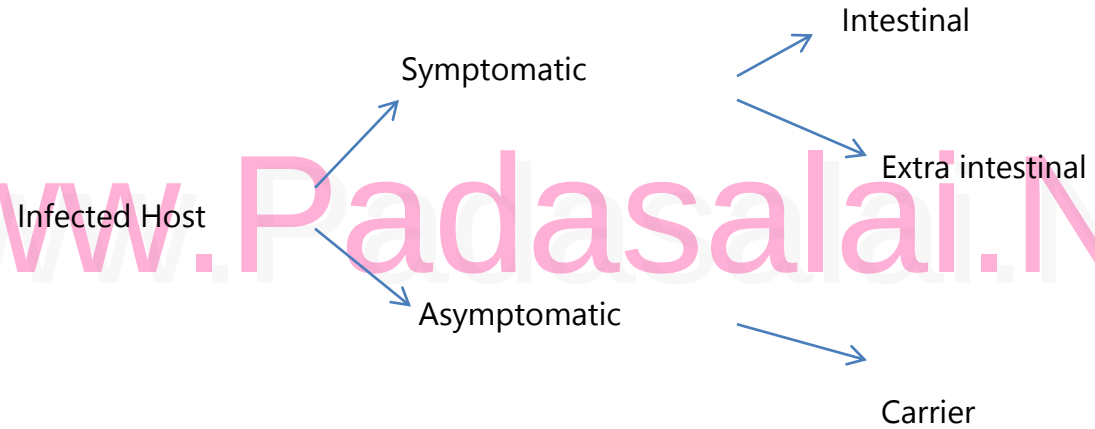
20. Semisynthetic Penicillin

- Both fermentation and chemical approach are used to produce - (21/2)
- Can be taken orally
- Active against gram negative bacteria
- Eg. Amphicillin (1/2)

21. Enteric fever (2)

- Genus salmonella – bacilli-parasites the intestines of vertebrates and human beings.
- Causes enteric fever (typhoid, paratyphoid)
- Bacilli multiply abundantly in gall bladder and discharged into intestine involving peyer's patches and ileum.

22. Clinical features of Amoebic dysentery. (2)



23. Dane Particle (2)

Double walled spherical structure 42nm in diameter of hepatitis B virus.

24. Enzymes used in PCR

1. Tag Polymerase (1)
2. Vent Polymerase (1)

Part – III

25.

Excitation filters (1)

Emission filters (1)

Dichroic filters (1)

26. (3 x 1= 3)

	Anabolism	Catabolism
1	Complex organic molecules are formed from simple ones	Complex organic compounds are broken down into simple ones
2	Biosynthetic reaction	Hydrolytic reaction
3	Endergonic (energy requiring)	Exergonic (energy releasing)

27. Advantanges (1 1/2)

1. Preserve food and make it safe to eat
2. Enables us to enjoy seasonal fruits (Strawberries, mangoes)

Disadvantages (1 1/2)

1. Excess salt and sugar not good for health
2. Preservation lead to loss of nutrients.

28. Primary screening (3 x 1 = 3)

1. Select the desired organisms
2. Eliminate undesirable organisms
3. Eg : crowded plate technique, auxanography

29. Chancre (3)

a. Primary syphilis – papule appears on the genital area that ulcerates forming chancre.

b. Covered by thick exudates

c. Rich in spirochetes

30. (3)

	Direct life cycle	Indirect life cycle
1	Lifecycle of parasite requires only single host	Lifecyclye of parasite requires two or more species
2	Eg : entamoeba histolytica human	Malaria – human and mosquito

31. Symptoms of Dengue hemorrhagic fever : (3 x 1= 3)

Fever, headache, retrobulbarpain, conjuctival injection, pain in the back and limbs, lymphadenopathy, maculopapular rash.

32. Transplantation (2)

Transfer of living cells, tissues or organs from one part of the body to another or from one individual to another.

Types of transplantation (1)

1. Auto grafting
2. Allo grafting
3. Xeno grafting

33. Fungal dimorphism

Fungi exist in both yeast at , 37°c and filamentous form at 25°c (21/2)

Eg : Histoplasma capsulatum (1/2)

Part – IV

34. Working Mechanism of phase contrast microscope

Explanation (3)

Diagram (2)

(or)

(b) Disc Diffusion method (Kirby-Bauer test)

Explanation (4)

Diagram (1)

35. (a) TCA Cycle (5)

Explanation / Cycle

(or)

(b) Types of food poisoning – flow chart (5)

36. (a) Production of citric acid - steps (5)

(or)

(b) Cholera toxin – mode of action (5)

37. (a) Life cycle of ascaris lumbricoides

Explanation (3)

Diagram (cycle) (2)

(or)

(b) Structure of rabies virus

Explanation (21/2)

Diagram (21/2)

38. (a) Differences between Immediate and delayed type hypersensitivity (5)

(or)

(b) Ames test

Explanation (3)

Diagram (2)