



- Notes : 1. All questions are compulsory.  
2. Discuss the reaction, mechanism wherever necessary.

1. Multiple Choice Questions: **20x1**  
**=20**
- i) Substitution of electron withdrawing group in  $\alpha$  position of benzylpenicillin -
- Make it alkali resistant
  - Show poor oral absorption
  - Stabilized against acid hydrolysis
  - Makes the molecule  $\beta$ -lactamase resistant
- ii) Which one of following is not the penicillanic acid sulphone-
- Tezobactam
  - Sulbactam
  - Clavulanate
  - None
- iii) Chloramphenicol sodium succinate is the salt of hemisuccinate ester and is preferred for -
- Pediatric use
  - Intravenous use
  - Oral use
  - All of these
- iv) Which one of the following is antimalarial with antimicrobial and antipneumocystic?
- Artemether
  - Artesunate
  - Atovaquone
  - Proguanil
- v) Following is the drug when used in combination with sulphadiazine it treats toxoplasmosis -
- Pyrimethamine
  - Proguanil
  - Atovaquone
  - Artemether
- vi) Which of the following protease inhibitors was developed by a hybridisation strategy?
- Ritonavir
  - Indinavir
  - Saquinavir
  - Amprenavir
- vii) Following is the precursor of synthesis of acyclovir.
- Adenine
  - Thymine
  - Guanine
  - Cytosine
- viii) Metronidazole is synthesized from ammonia, acetaldehyde and -----
- Glycerol
  - Glyoxal
  - Glycolic acid
  - Glyoxamine
- ix) Which one of the following is the antiprotozoal agent having furan ring system in it?
- Iodoquinol
  - Pentamidine
  - Eflornithin
  - Diloxanide

- x) Piperazine nucleus containing anthelmintics is-
- |                       |                |
|-----------------------|----------------|
| a) Oxamniquine        | b) Niclosamide |
| c) Diethylcarbamazine | d) Mebendazole |
- xi) Which of the following cephalosporin containing N-methyl-5-thiotetrazole moiety at the 3rd position?
- |                 |                     |
|-----------------|---------------------|
| a) Cefoperazone | b) Cefmetazole      |
| c) Cefamandole  | d) All of the above |
- xii) Aztreonam-
- |  |
|--|
| a) Is only active against gram +ve bacteria              |
| b) Is only active against gram -ve bacteria              |
| c) Is only active against gram +ve anaerobes             |
| d) Is active against both gram -ve and gram +ve bacteria |
- xiii) Stable chelate complexes are formed by the tetracyclines with metal like
- |            |                 |
|------------|-----------------|
| a) Calcium | b) Magnesium    |
| c) Iron    | d) All of these |
- xiv) Quinoline moiety is synthesized from-
- |  |
|--|
| a) 3-Chloroaniline & Ethylacetoacetate |
| b) P-Chloroaniline & Ethylacetoacetate |
| c) 4-Chloroacetate & Ethyloxaloacetate |
| d) 3-Chloroaniline & Ethyloxaloacetate |
- xv) Malaria is caused by?
- |               |                  |
|---------------|------------------|
| a) Mycoplasma | b) Dermatophytes |
| c) Protozoa   | d) Spirochaetes  |
- xvi) Select example of compound having C<sub>1</sub> and C<sub>2</sub> ring form in quinolone derivatives.
- |                   |                 |
|-------------------|-----------------|
| a) Nalidixic acid | b) Norfloxacin  |
| c) Prulifloxacin  | d) Gatifloxacin |
- xvii) 2, 4, 5-trifluoro benzoic acid is the primary precursor of synthesis of-
- |                   |                  |
|-------------------|------------------|
| a) Nitrofurantoin | b) Ciprofloxacin |
| c) Hexamine       | d) Ofloxacin     |
- xviii) Which one of the following is the inhibitor of enzyme, Arabinosyl transferase?
- |               |                 |
|---------------|-----------------|
| a) Isoniazid  | b) Ethionamide  |
| c) Ethambutol | d) Pyrazinamide |
- xix) In Ivermectin, mixture of B<sub>1a</sub> and B<sub>1b</sub> should be in ratio of-
- |          |          |
|----------|----------|
| a) 20:80 | b) 80:20 |
| c) 60:40 | d) 40:60 |
- xx) In sulphonamide, any substitution at C2, C3, C5 and C6 results in-
- |                          |                      |
|--------------------------|----------------------|
| a) Most active compound  | b) Inactive compound |
| c) No effect on activity | d) Toxic compound    |

2. Solve **any two**: **2x10**  
**=20**
- i) Describe antiviral agents, give mechanism of action of each class with examples and draw the synthesis of acyclovir.
  - ii) Classify penicillin antibiotics with two examples of each class. Write chemical degradation of penicillin and give synthesis of oxacillin.
  - iii) Classify antifungal agents and give mechanism of action of each class with examples. Draw the synthesis of Miconazole.

3. Solve **any seven**: **7x5**  
**=35**
- i) Write note on UTI. Draw the synthesis of ciprofloxacin.
  - ii) Discuss about antiprotozoal agents. Draw the synthesis of metronidazole.
  - iii) Write note on anthelmintics. Draw the synthesis of mebendazole.
  - iv) Write about Chemistry of Aminoglycosides and give two examples.
  - v) Describe etiology of malaria and draw the synthesis of Pamaquine.
  - vi) Discuss the SAR of Cephalosporins.
  - vii) Write note on antiviral agents. Draw the synthesis of acyclovir.
  - viii) Write about folate reductase inhibitors. Draw the synthesis of trimethoprim.
  - ix) Short note on antitubercular agents. Draw the synthesis of isoniazid.

\*\*\*\*\*

