REV-01
BPH/06/12

2023/12

SET A

B. PHARM.
FIFTH SEMESTER
MEDICINAL CHEMISTRY-II
BP501T [REPEAT]
[USE OMR FOR OBJECTIVE PART]

Duration : 3 hrs. **Full Marks : 75**

PART-A: Objective

Time : 30 min. **Marks : 20**

Choose the correct answer from the following: ***1×20=20***

1. A drug used to treat erectile dysfunction by blockade of phosphodiesterase enzyme-5 in the penile cavernosum?
   a. Yohimbine
   b. Silodosin
   c. Sildenafil
   d. Tamsulosin

2. What do all steroids have in common
   a. They contain four rings of carbon atoms
   b. They contain at least one fatty acid group
   c. They are manufactured by the liver
   d. They are water-soluble

3. A steroid nucleus having 21 carbon is
   a. Cholane
   b. Gonane
   c. Androstane
   d. Pregnane

4. Testosterone production is mainly contributed by
   a. Leydig cells
   b. Sertoli cells
   c. Seminiferous tubules
   d. Epididymis

5. Tolbutamide
   a. A First-generation drugs hypoglycaemic drug
   b. Treat type-I diabetes
   c. A second-generation drugs hypoglycaemic drug
   d. A third-generation drugs hypoglycaemic drug

6. Thyroid peroxidase is an enzyme responsible for thyroid hormone synthesis. This enzyme catalyzes the following reaction, except?
   a. Conversion of iodide to iodine-free radical
   b. Incorporation of iodine into a tyrosine residue of thyroglobulin
   c. Condensation of monoiodo-tyrosine and diiodotyrosine
   d. Cleavage and release of thyroid hormones

7. Which of the following is not the common characteristic features of type 2 diabetes mellitus?
   a. Impaired insulin secretion
   b. Increased Insulin resistance
   c. Diabetic ketoacidosis
   d. Excessive hepatic glucose production

8. Chemicaly mechlorethamine is
   a. Bis(2-chloromethyl)(ethyl)amine
   b. Bis(2-chloroethyl) (propyl) amine
   c. Bis(2-chloroethyl)(methyl)amine
   d. Bis(2-chloropropyl) (methyl) amine

9. An example of drug from class piperazine anti-histamine drug?
   a. Cimetidine
   b. Buclizine
   c. Promethazine
   d. Levocetrizine

10. The following anti-neoplastic drug is a mitotic inhibitor and cause metaphase arrest?
   a. Vincristine
   b. Cytarabine
   c. Busulfan
   d. Procarbazine

11. .....is an example of osmotic diuretics-
   a. Amiloride
   b. Triamterene
   c. Clopamide
   d. Glycerol

12. What is the molecular formula for hydrazine?
   a. H_2O_5
   b. N_2H_4
   c. N_2O_4
   d. H_2O_4

13. The reduced product of glucose is-
   a. Fructose
   b. Glyceraldehyde
   c. Sorbitol
   d. Glycogen

14. What is the starting compound to synthesis of disopyramide ?
   a. 2-bromopyridine & 3-phenylacetonitrile
   b. 2-bromopyridine & 2-phenylacetonitrile
   c. 3-bromopyridine & 2-phenylacetonitrile
   d. 3-bromopyridine & 3-phenylacetonitrile

15. The site of action for Spironolactone is-
   a. Proximal tubule/loop of henle
   b. Distal tubule/collecting duct
   c. Ascending loop of henle/distal tubule
   d. Both b&c

16. Which of the following is a high potency injectable anesthetia?
   a. Procaine
   b. Lidocaine
   c. Tetracaine
   d. Prilocaine

17. The hydrophilic portion of amide derivatives contain .....amine
   a. Primary
   b. Secondary
   c. Tertiary
   d. Quarternary

18. What is the starting compound to synthesis benzocaine?
   a. Toluene
   b. p-nitrobenzoic acid
   c. Phenol
   d. Acetic anhydride

19. What is the molecular formula for acetic anhydride ?
   a. $(CH_3CO_2)_2$
   b. $(CH_3CO)_2$
   c. $(CH_3CO)_2O$
   d. $(CH_3CO)O$

20. In the structure of acetazolamide which ring system is present?
   a. Diazo ring
   b. Thiatriazole ring
   c. Thiadiazole ring
   d. Thiazole ring

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PART-B: Descriptive

Time : 2 hrs. 30 min. Marks : 35

[Answer any seven (7) questions]

1.	Write the SAR of alkylating agent ?	5
2.	Write a note on H2 receptor antagonists. Give the synthesis of Cimetidine.	5
3.	Write the mechanism of action of metformin with two uses?	5
4.	Write the SAR of androgen?	5
5.	Write the mechanism of action for loop diuretics with a clean diagram?	5
6.	Define local anesthetics? Describe the SAR of benzoic acid derivative?	5
7.	Write the synthesis of the following drugs with two uses- a) Benzocaine b) Procaine	5
8.	Define antianginal drugs? Write the classification with structures?	5
9.	Describe the SAR of disopyramide?	5

PART-C : Long type questions

[Answer any two (2) questions]

1. What are antineoplastic agents? Classify them with example? Discus the mechanism of action of alkylating agents. Outline the synthesis of Mechlorethamine. **10**

2. What are H1 receptor antagonists? Explain their mechanism of action? Outline the synthesis of Diphenhydramine HCl and Promethazine HCl. **10**

3. Describe the SAR of the following – **a.** Warfarin **10**
   b. Loop diuretics

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