

# GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018

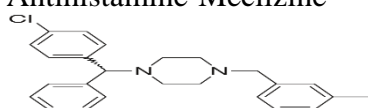
**Subject Code:2153601**
**Date:20/11/2018**
**Subject Name:Pharmaceutical Chemistry**
**Time: 10:30 AM TO 01:00 PM**
**Total Marks: 70**
**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

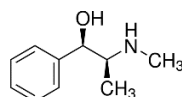
**MARKS**

**Q.1 (a)** Write the Mode of Action (MOA) & Structural Activity Relationship (SAR) of Sulphonyl Urea class of oral hypoglycaemic drugs. **03**

**(b)** By synthon approach, suggest a scheme for the synthesis of H1-Antihistamine-Mecizine **04**

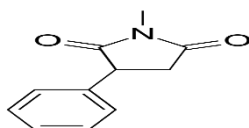


**(c)** Write the synthesis of (1R,2S)(-)Ephedrine by disconnection approach. Describe the separation of (1R,2S)(-) Ephedrine from the 4 isomeric mixtures obtained from the chemical synthesis. **07**

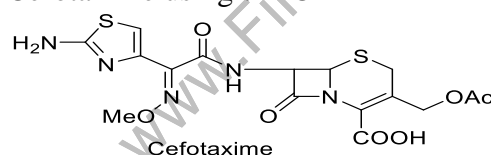


**Q.2 (a)** Write the classifications of hormones. **03**

**(b)** Suggest a commercial root for the synthesis of anticonvulsant drug Phensuximide which is having a 5 membered Pyrrolidine dione ring. **04**



**(c)** Write the synthesis of third generation Cephalosporin drug- Cefotaxime using 7-ACA **07**



**OR**

**(c)** Describe the chemical degradation of Penicillin **07**

**Q.3 (a)** Write down the general names and structures of steroids having 18, 19, 21 and 27 carbons. **03**

**(b)** What are the classifications of Androgens? What are the therapeutic uses of Androgens? Give two examples of Androgens with structure. **04**

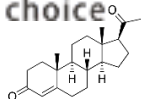
**(c)** What are Hormonal Contraceptives? Describe the classifications of Oral contraceptive with suitable examples. **07**

**OR**

**Q.3 (a)** Write the structures of following: (1). 5 $\beta$ ,19-nor-androst-3-one, (2). 11 $\beta$ ,17 $\alpha$ ,21-trihydroxypregn-4-ene-3,20-dione. **03**

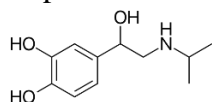
**(b)** Write the metabolism of Testosterone. **04**

**(c)** Write the SAR of Progesterones **07**

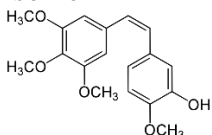


Progesterone

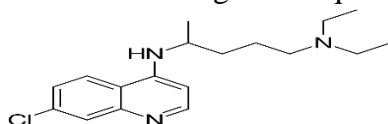
- Q.4 (a)** By disconnection approach, suggest a scheme for the synthesis of Isoproterenol **03**



- (b)** By disconnection approach arrive at the starting material for the organic synthesis of the Cis isomer of anti-cancer drug Combretastatin A-4. Discuss the strategies employed to get the Cis isomer **04**



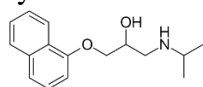
- (c)** By disconnection approach, suggest a scheme for the synthesis of anti-malarial drug Chloroquine having a quinoline structure. **07**



OR

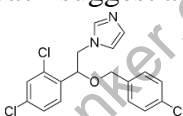
- Q.4 (a)** Write any four guidelines for choosing a disconnection in organic synthesis by synthon approach. Give suitable examples. **03**

- (b)** By disconnection approach arrive at a suitable scheme for the synthesis of Propranolol **04**



- (c)** By disconnection approach suggest a scheme for the synthesis of **07**

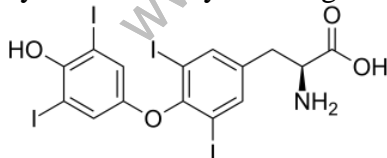
Antifungal Econazole



- Q.5 (a)** What are the general causes for Iron deficiency? Discuss in brief the Iron preparations. **03**

- (b)** Briefly describe Calcium Homeostasis **04**

- (c)** Name the Thyroid hormones and write their functions. Write the synthesis of Thyroid drug-Levothyroxine. **07**

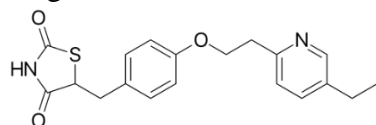


OR

- Q.5 (a)** What are Antithyroid drugs? Give two examples with structure **03**

- (b)** Write the metabolism of Oestrogens **04**

- (c)** Write the MOA & Synthesis of Oral anti-diabetic drug-Pioglitazone. **07**



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