

SEAT No. \_\_\_\_\_

No of printed pages: 03

[76&A-51]

SARDAR PATEL UNIVERSITY  
B.Sc. Chemistry (V Semester) Examination  
Tuesday, 10-04-2018  
Organic chemistry (US05CCHE02)

N.B. 1) Figures to right indicates full marks

Total Marks: 70

2) Attempt all questions

Time : 2.00 pm to 5.00 pm

Q. 1 : Answer the following multiple choice questions.

[10]

- 1) The partial reduction of aromatic compounds in presence of Na/liq.  $\text{NH}_3$  and alcohol is known as -----
  - a) Beckmann rearrangement
  - b) Sommet rearrangement
  - c) Clemmenson reduction
  - d) Birch reduction
- 2) In which of the following reaction Betain intermediate is formed.
  - a) Wittig reaction
  - b) Baeyer-Villiger oxidation
  - c) Perkin reaction
  - d) Mannich reaction
- 3) Which of the following drug is used in treatment of cholera?
  - a) Depsone
  - b) Warfarin
  - c) Hetrazan
  - d) Nirvanol
- 4) Anemia is caused by deficiency of -----
  - a) Iron
  - b) Vitamin  $\text{B}_{12}$
  - c) Follic acid
  - d) All
- 5) Which of the following reagent is known as Tilden's reagent?
  - a)  $\text{NOCl}$
  - b)  $\text{NaOBr}$
  - c)  $\text{Na/liq. NH}_3$
  - d)  $\text{NaOAc}$
- 6) How many isoprene units are present in limonene ?
  - a) 3
  - b) 4
  - c) 5
  - d) 2
- 7) Jaundice is caused by Harmones -----
  - a) Oestrone
  - b) Cortisol
  - c) Testosterone
  - d) Adrenaline
- 8) Which of the following are Female Harmones?
  - a) Androgens
  - b) Oestrogens
  - c) Gastogens
  - d) b and c
- 9) Which of the following intermediate is formed in Sommet rearrangement?
  - a) Ylide
  - b) Betain
  - c) carbocation
  - d) Free radical
- 10) How many crystal forms are possible in Oestrone?
  - a) Four
  - b) Three
  - c) Two
  - d) One

**Q. 2 : Answer the following questions. ( Any ten)**

[20]

- 1) Explain the Birch reduction of benzoic acid with mechanism.
- 2) How will you prepare Wittig reagent?
- 3) p-nitrobenzaldehyde does not undergo benzoin condensation. Explain
- 4) What are the requirements of an ideal anticoagulant agent?
- 5) Write the structure and uses of following drugs.
  - i) Benadryl
  - ii) Nirvanol
- 6) What is isoprene rule? Explain with suitable example.
- 7) Write the oxidative product of camphor and  $\alpha$ -piene.
- 8) Distinguish between Bacteria and virus.
- 9) Define  $\alpha,\beta$ -unsaturated carbonyl compounds and write any two examples of  $\alpha,\beta$ -unsaturated carbonyl compounds .
- 10) Give the classification of Hormones.
- 11) Write the demerits of steam distillation method used for isolation of essential oils.
- 12) How will you confirm the presence of steroid nucleus in oestrone?

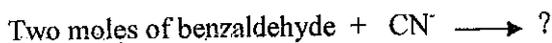
**Q. 3 : A) Discuss the following.**

[07]

- i) Baeyer Villager oxidation
- ii) Favorski rearrangement

**B) Complete and rewrite the following reaction and suggest the appropriate mechanism for it.**

[03]



**OR**

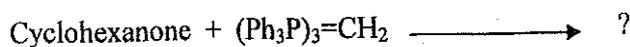
**Q.3 : A) Answer the following.**

[07]

- 1) How will you convert carboxylic acid into primary amine?.
- 2) Give the mechanism for the conversion of ketoxime into N-substituted amide.

**B) Complete and rewrite the following reaction and suggest the appropriate mechanism for it.**

[03]



**Q.4 : A) What are drugs? Classified the drugs on the basis of their therapeutic actions. [04]**

**B) Write the synthesis, class and uses of the following drugs. [06]**

- 1) Chloroquine                      2) Phenobarbital

**OR**

**Q. 4 : A) What are sulpha drugs? Discuss the mechanism of action of sulpha drug. [04]**

**B) Write the synthesis for the following. [06]**

- 1) Drug is used as anticoagulant.  
2) Drug used in treatment of Urticaria  
3) Drug used in treatment of arthritics

**Q.5 : A) Write the synthesis of the following. [06]**

- i) Brack – Schinz synthesis of Geraniol  
ii) Ruzicka synthesis of Linalool

**B) Discuss in detail Gem dialkyl rule in terpenoid chemistry. [04]**

**OR**

**Q.5 : A) Explain the role of ozone and sodium hypohalite in structure determination of Terpenoids. [03]**

**B) Write the synthesis of citral using 3-methyl-1-batanol via Arens-Van Drops synthesis. [03]**

**A) Disuss Wallach's oxidative degradation of  $\alpha$  – terpineol. [04]**

**OR**

**Q.6: Discuss in detail the constitution of testosterone. Also write the synthesis of testosterone using cholesterol via Ruzicka and Butenandt synthesis. [10]**

**OR**

**Q .6 : Discuss electrophilic addition on  $\alpha,\beta$ -unsaturated carbonyl compounds . Explain Michel addition reaction with mechanism. [10]**

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