Name: ....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Chemistry Degree Examination, November 2021

BCH5B06 – Inorganic Chemistry – III

(2019 Admission onwards)

Time: 2 hours   Max. Marks: 60

SECTION A
All questions can be attended. Each questions carries 2 marks

1. Explain the elimination of borate radical.
2. What is meant by micro analysis?
3. Give the composition and use of alnico.
4. What is zone refining?
5. Explain why Helium is used in diving apparatus as diluent.
6. Give the structure and hybridization in IF_5.
7. Explain the reaction of XeF_4 with water
8. How is cyclic tri-phosphonitrilic chloride prepared? What is its use?
9. What is levelling effect?
10. What is eutrophication?
11. Explain thermal pollution.
12. Explain biomedical waste

(Ceiling 20 Marks)

SECTION B
All questions can be attended. Each questions carries 5 marks

13. Explain the mechanism of precipitate formation
14. Write a note on refining of nickel
15. Compare the properties of halogens and cyanogen.
16. Explain the preparation, properties, and structure of S_4N_4.
17. Illustrate reactions in liquid SO_2
18. Explain the water quality parameters DO, BOD, and COD
19. Discuss energy production from waste.

(Ceiling 30 Marks)

SECTION C
Answer any one question. Each question carries 10 marks

20. Discuss the use of Ellingham diagram for the reduction of metal oxides
21. Discuss different causes of water pollution

(1 x 10 = 10 Marks)

(Pages : 2)   Reg. No:.............................

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Chemistry Degree Examination, November 2021

BCH5B07 – Organic Chemistry – II

(2019 Admission onwards)

Time: 2 hours   Max. Marks: 60

SECTION A

All questions can be attended. Each questions carries 2 marks

1   Give the structure and IUPAC name of the final product obtained when propanone reacts with methyl magnesium bromide followed by hydrolysis.

2   Explain with an example the regioselectivity in hydroboration-oxidation reaction.

3   Give a reaction for the conversion of but-2-ene to 2,3-butene oxide.

4   "Crown ethers form inclusion compounds." Explain this statement

5   How are ethyl acetate obtained from methyl magnesium bromide?

6   What is Reformatsky reaction.

7   Explain the reaction of formaldehyde with ammonia. Mention the chief use of the product.

8   What is Clemmensen reduction? Give an example.

9   What is HVZ reaction? Explain with a suitable example.

10 Fill in the blanks in the following equations:
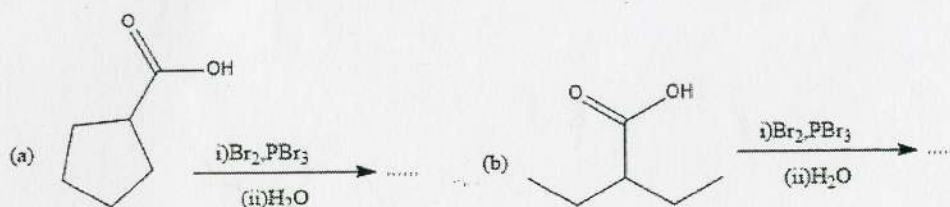
11 Compare the basicity of urea and guanidine

12 What is the product obtained when acetoacetic ester condenses with urea?

(Ceiling 20 Marks)

SECTION B
All questions can be attended. Each questions carries 5 marks

13. Explain pinacol-pinacolone rearrangement with an example and give its mechanism.

14. Explain the Zeisel's method of estimating methoxy groups.

15. Explain the relative reactivities of aldehydes and ketones towards nucleophilic addition reactions.

16. Write a general discussion on the relative acidities of phenols and carboxylic acids.

17. What is meant by decarboxylation reaction? What are the products obtained on the decarboxylation of   (i) Salicylic acid, and   (ii) Pthalic acid?

18. Write a note on reduction products of Nitrobenzene in different mediums.

19. How can acetylene be converted to pyridine? Explain nitration reaction of pyridine.

(Ceiling 30 Marks)

SECTION C
Answer any one question. Each question carries 10 marks

20. Explain diazotisation. Why aliphatic diazonium salts are less stable compared to aromatic diazonium salts? Discuss the synthetic applications of diazonium salts.

21. Write short notes on:
    (i) Liebermann's nitroso reaction   (ii) Reimer- Tiemann reaction
    (iii) Kolbe reaction   (iv) HoubenHoesch reaction

(1 x 10 = 10 Marks)

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Reg. No:..........................

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Fifth Semester B.Sc Chemistry Degree Examination, November 2021

(Open Course)

BCH5D02 – Chemistry in Daily Life

(2019 Admission onwards)

Time: 2 hours   Max. Marks: 60

Section A (Short answers)
(Answer questions up to 20 marks. Each question carries 2 marks)

1. Explain with examples the classification of polymers based on the origin.

2. What is meant by vulcanisation of rubber?

3. What is the significance of plastic identification codes?

4. Explain different classes of enzymes.

5. What is meant by artificial sweeteners? Give any two examples.

6. Discuss the examples of commonly used permitted and non-permitted food colours

7. Explain the major composition of Neera.

8. Differentiate pharmacodynamics and pharmacokinetics.

9. What is meant by DNA.

10. What is TFM? Explain its significance in soap.

11. What is meant by antiperspirants?

12. Explain briefly the main ingredients and their functions of lipsticks.

[Ceiling of Marks: 20]

Section B (Paragraph)
(Answer questions up to 30 marks. Each question carries 5 marks)

13. What are biodegradable polymers? Discuss the applications of PGA, PLA and PHBV.

14. Explain the functions of sex hormones.

15. Discuss the source, function and deficiency diseases of vitamin-A and vitamin-C

16. Explain the impact of extensive use of fertilizers on environment.

17. Discuss the ingredients and functions of cold creams, vanishing creams and bleach creams.

18. Explain with examples analgesics, antipyretics and antihistamines.

19. What is meant by dyes? Explain, with examples the classification of dyes based on mode of application.

[Ceiling of Marks: 20]

Section C (Essay)
(Answer any *one*. Each question carries 10 marks)

20. a) Explain the health effects with definition of fast-food, dehydrated food and junk food.   (6marks)

    b) Discuss applications of polystyrene, Bakelite, terylene, and teflon.   (4marks)

21. a) Define fuels and explain its classifications.   (5marks)

    b) Explain the origin, fractional distillation and various fractions contained in petroleum.   (5marks)

[1×10 = 10 Marks]