



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program :Seventh Semester – 2020

Roll No. in Fig.

Roll No. in Words.

Paper: Applied Chemistry (Sp. Theory-I)

Course Code: CHEM-415

Part – I (Compulsory)

Time: 15Min. Marks: 10

Attempt this Paper on this Question Sheet only.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Signature of Supdt.:

Q.1. Encircle the right answer cutting and overwriting is not allowed. (10x1=10)

1. Which of the following fertilizer does not change the pH of the soil?

- (a) NH_4NO_3 (b) $(\text{NH}_4)_2\text{SO}_4$
(c) KNO_3 (d) All of the above

2. Ammonium fertilizer is made by two components, they are

- (a) Ammonia and Hydrogen (b) Nitrogen and Hydrogen
(c) Nitrogen and Water (d) Ammonia and Nitric Acid

3. If there is lack of nitrogen in soil, plants turn

- (a) Blue (b) Blue
(c) Red (d) To be stunted

4. Following are the reasons behind the removal of lignin in pulp washes

- (a) To reduce bleaching chemical demand (b) To maintain bleaching chemical demand
(c) To increase bleaching chemical demand (d) To freeze bleaching chemical demand

5. Which is fresh pulping liquor for the Kraft process, consisting of active pulping species NaOH , Na_2S and small amount of Na_2CO_3 .

- (a) Black liquor (b) Red liquor
(c) White liquor (d) Green Liquor

6. Which process is used to treat all types of woods for pulping process?

- (a) Mechanical pulping (b) Neutral-sulfite pulping
(c) Kraft process (d) All of the above

7. Chelating agents such as _____ have been used to prevent pulp discoloration by binding together with Ferric ions that could otherwise form a colored complex with phenolic lignin

- (a) EDTA (b) Citric acid
(c) Oxalic acid (d) Acetic acid

8. Salt content (measured as NaCl) in electrically desalted crude oil comes down to a level of about PTB (pound per thousand barrel)

- (a) 0.03 (b) 3
(c) 30 (d) 300

9. The main aim of cracking is to produce

- (a) Lube oil (b) Coke
(c) Gasoline (d) All of the above

10. Which of the following is desirable in gasoline but undesirable in kerosene?

- (a) Paraffins (b) Mercaptans
(c) Aromatics (d) Naphthalenic acid



ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2. Give short answers of the following: (10x2=20)

- 1) Mention different unit operations/processes involved in treatment of crude oil.
- 2) What do you understand about migration of oil?
- 3) What is catalytic alkylation?
- 4) How prilling is carried out during urea manufacturing?
- 5) What is the role of beating in pulp refining?
- 6) Write down the action of ammonium sulfate as fertilizer.
- 7) Briefly explain Kraft pulping process?
- 8) Write down the temperature and catalyst conditions for Haber's process?
- 9) What kind of agriculture waste is used to make paper?
- 10) What is the significance of potash fertilizers?

Answers the following questions. (3x10=30)

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| Q 3. | (a) Briefly explain refining process in petroleum industry; also write down its products. | 5 |
| | (b) Discuss the catalytic cracking process. | 5 |
| Q 4. | (a) Describe all the raw materials used in paper manufacturing. | 5 |
| | (b) Write Sulphite process of pulp production. | 5 |
| Q 5. | (a) Briefly explain the classification of fertilizers. | 5 |
| | (b) Describe urea manufacturing process, also mentioning its applications. | 5 |