



# 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-II)

Course Code: CHEM-416

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)**

- For bright NICKEL PLATING, pH of the solution is maintained at  
(a) 4 to 5                      (b) 3 to 5                      (c) 4 to 4.5                      (d) 3.5 to 4.5
- WROUGHT IRON contains what percentage of CARBON?  
(a) 0.1 – 0.75%                      (b) 0.12 – 0.25%                      (c) 0.2- 0.50 %                      (d) 0.3 – 0.45%  
(d)
- Which of the following DYES is FAST to LIGHT?  
(a) Procion H                      (b) Methylene Blue                      (c) Basacryl Yellow 7GL                      (d) Cloth Red G
- ACID DYES usually contain salts of SODIUM  
(a) Sulphonic acid                      (b) Phenolic compound  
(c) Amino compounds                      (d) Both a & b
- In which sub-class of AZO DYES does ERIOCHROME BLACK T (EBT) belong?  
(a) Mono-azo mordant dyes                      (b) Mono-azo solvent dyes  
(c) Mono-azo disperse dyes                      (d) Mono-azo direct dyes
- ETCHING solution usually contains  
(a) Chromic acid                      (b) Sulfuric acid                      (c) Both a and b                      (d) None of these
- The formula of THOMAS SLAG is  
(a)  $\text{Ca}_3(\text{PO}_4)_2$                       (b)  $\text{CaSiO}_3$                       (c)  $\text{MnSiO}_3$                       (d)  $\text{FeSiO}_3$
- The temperature ( $^{\circ}\text{C}$ ) at the zone of ABSORPTION is  
(a) 800-1000                      (b) 300-700                      (c) 800-900                      (d) 1000-1300
- In CENTRIFUGAL ANALYZERS the transmitter is usually read at \_\_\_\_\_ rpm  
(a) 350                      (b) 600                      (c) 400                      (d) 500
- STAINLESS STEEL contains a minimum of 11% CHROMIUM and which other METAL?  
(a) Fe                      (b) Ni                      (c) Cu                      (d) Zn



**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

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

- i. What are BATHOCHROMIC and HYPSOCHROMIC groups?
- ii. What is the role of DATA EVALUATION in INDUSTRY?
- iii. What are the effects of IMPURITIES on STEEL?
- iv. What is a HOLLOW CATHODE LAMP and where is used?
- v. What is ROUGHING in STEEL?
- vi. What is a MORDANT?
- vii. What is the general principle of ELECTROPLATING?
- viii. What is difference between STAINLESS STEEL and ALLOYED STEEL?
- ix. Give the synthesis of NITROSO DYES.
- x. What is meant by PASSIVITY of IRON?

**Answers the following questions.**

- Q No. 3:- (a) Explain the BESSEMER process for the manufacture of STEEL. (5)**  
**(b) How is NICKEL PLATING carried out? (5)**
- Q No. 4:- (a) Write a note on DYE INTERMEDIATES. (4)**  
**(b) Write a note on any two theories of RUSTING. (6)**
- Q No. 5:- (a) What are the different applications of AAS? (4)**  
**(b) Differentiate between DISCRETE and CONTINUOUS ANALYSERS. (6)**