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Question Paper Code: U1Y06

B.E./B.Tech. DEGREE EXAMINATION, MAY 2024

First Semester

Civil Engineering

21UCY106 - CHEMISTRY FOR CIVIL ENGINEERS

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

PART A - (10 x 1 = 10 Marks)

1. Bicarbonates of Ca and Mg causes CO1- U
(a) Softness (b) permanent hardness
(c) temporary hardness (d) none of the above
2. Distilled water can be obtained by CO1 -U
(a) boiling (b) Zeolite process (c) Lime-soda process (d) Ion-exchange process
3. During the galvanic corrosion the noble metal act as CO1- U
(a) Anode (b) Cathode (c) Catalyst (d) Corroding metal
4. Importance(s) of electroplating are CO1- U
(a) Resistance of Corrosion (b) Improving hardness
(c) Increasing commercial value (d) All the above
5. The Mass spectrometer separate ions on the basis of which of the following? CO1 -U
(a) Mass (b) Molecular weight (c) Charge (d) Mass to charge ratio
6. In AAS, which of the following is the generally used radiation source? CO1- U
(a) Tungsten lamp (b) Xenon mercury arc lamp
(c) Hydrogen lamp (d) Hollow cathode lamp
7. The example of super heat duty refractories ----- bricks CO1- U
(a) Fire clay (b) Chromite (c) Magnesite (d) All the above

8. PCE number mention for the----- CO1- U
 (a) Thermal spalling (b) Porosity (c) Refractoriness (d) RUL
9. Green cement is _____ CO1- U
 (a) Green colored cement (b) Cement mixed with plant products
 (c) Cement mixed with recycled materials (d) Cement mixed with green algae
10. Wet cement can cause severe skin ____ if not washed off with water CO1- U
 immediately
 (a) Burns (b) Chill (c) Head ache (d) All the above

PART – B (5 x 2= 10 Marks)

11. Distinguish between temporary and permanent hardness of water. CO1- U
12. Analyze the reason of why bolt and nut prepare in same metal? CO5- Ana
13. Write an application of X-Ray Diffractometer. CO2-U
14. How do you mention a PCE number for new bricks? CO3-App
15. Give me a reason of why water spray on the new concrete building? CO3-App

PART – C (5 x 16= 80 Marks)

16. (a) Due to water crisis, salt water is converted to drinking water in both rural and coastal area. Analyze the suitable method for this process with proper reason. CO4- Ana (16)
 Or
 (b) Analyze the hardness of well water by complexometric titration CO4- Ana (16)
17. (a) The ship hull and underground pipeline made up on iron body. After few months the ship and pipeline damaged. Analyze the problem and how to prevent this problem in ship hull and pipeline. CO5- Ana (16)
 Or
 (b) Ramu has a copper statue in his pooja room; it is very dull in color. He tries to make luxury statue. Analyze the problem and how to make valuable luxuries statue? CO5- Ana (16)
18. (a) Selva prepare sugar solution on various concentration A To E but Deva's don't know this solution concentration. Then how to Deva analyze the sugar solution concentration from beer lamberts law. CO5- Ana (16)

Or

- (b) Metal area covered by a drop of water, dust, scale and sand etc, has to tendency to get corrodes. Analyze the types of corrosion and explain it. CO5- Ana (16)
19. (a) Senthil has weak acidic and weak basic materials for preparation of crucible. What kind of suitable refractories he needs to manufacture. CO3-App (16)
- Or
- (b) Apply the knowledge to prepare to best refractories materials from the following properties of refractoriness, RUL, Porosity. CO3-App (16)
20. (a) How do you manufacture of best grade cement for river crossing bridge? CO1-U (16)
- Or
- (b) Use the following technique to prepare flower vases from fire-clay. Grinding, screening, tempering, moulding, drying and fire CO1-U (16)

