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Sardar Patel University

B. Sc. (Semester – III) Examination

Date: 02/12/2019, Monday

Time: 02:00 to 05:00

Industrial Chemistry Vocational

COURSE NO: US03CICV21 (Chemical Plant Auxiliaries & Manufacturing)

Notes: Figures to the right indicate full marks.

Total

marks: 70

Q.1 Answer the following Multiple Choice Questions. (All are compulsory) (10)

1. Purest form natural water is.....

A. River Water	C. Sea Water
B. Rain Water	D. Lake Water
2. Hardness in water is caused by presence of.....

A. Sodium chloride	C. Calcium chloride
B. Sodium carbonate	D. Potassium nitrate
3. Temporary hardness in water can be removed by....

A. Filtration	C. Sedimentation
B. Boiling	D. None of these
4. The pressure at the inlet of a refrigerant compressor is called.....

A. Suction pressure	C. Critical pressure
B. Discharge pressure	D. Back pressure
5. The pressure at the outlet of a refrigerant compressor is called.....

A. Suction pressure	C. Critical pressure
B. Discharge pressure	D. Back pressure
6. The reciprocating compressor are very suitable for.....

A. Small displacements and low condensing pressures	C. Small displacements and high condensing pressures
B. Large displacements and high condensing pressures	D. Large displacements and low condensing pressures
7. Conversion of picric acid from benzene isprocess.

A. Oxy-Nitration	C. Esterification
B. Amination	D. Hydrolysis
8. Which one of the following is a unit operation?

A. Oxidation	C. Reaction
B. Electrolysis	D. Distillation
9. Benzoyl peroxide is prepared by reacting a

A. $2C_6H_5CH_2COCl + Na_2O_2$	C. $2C_6H_5COCl + Na_2O_2$
B. $2C_6H_5CH_2Cl + Na_2O_2$	D. $2SO_2Cl + Na_2O_2$
10. The customary form of oxidation with dichromate is in the presence of.....

A. Hydrochloric acid	C. Sulfuric acid
B. Acetic acid	D. Nitric acid

Q.2 Answer the following short questions, (ANY TEN) (20)

1. Differentiate terms "Scale" and "Sludge".
2. Why is hot lime soda process better than the cold process?
3. Define term Zeolite.
4. Define term Suction pressure.
5. Define term Suction volume.
6. Define term Wet steam.
7. Define the term oxy-nitration and give suitable example
8. Define unit process & unit operation with example
9. Define the term partial reduction and give its reagent.
10. Write a reaction for Sand-Mayer reaction.
11. Giving suitable reactions, write about Iodination reaction.
12. Define term "Transesterification".

Q.3 Describe ion-exchange process for softening of hard water also outline the Zeolite process. (10)

OR

Q.3 Discuss Deionizer process with the help of labeled diagram and explain advantages of solid, liquid and gaseous fuels over each other. (10)

Q.4 Explain with the help of neat sketch, work done by single stage, single acting reciprocating compressor without clearance volume. (10)

OR

Q.4 Write notes on "Accessories of boiler", "Steam power plant" and "Carnot cycle". (10)

Q.5 Discuss in detail manufacturing of "Nitrobenzene by continuous process using fortified spent acid" and "Benzene sulfonic acid process by barbet process". (10)

OR

Q.5 Write a short note on "Bechamp reduction" and discuss in detail a manufacturing process for Aniline. (10)

Q.6 Write note on types of oxidative reaction and discuss the manufacturing of Acetic acid. (10)

OR

Q.6 Discuss the manufacturing of "Monochloroacetic acid" and "Vinyl acetate". (10)

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