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Roll No. .....

5th Sem / Chemical

Subject : Material Science and Technology

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Which of the following is most common characteristic of metals? (CO1)

a) High porosity b) Low melting point

c) High conductivity d) Brittle

Q.2 Polypropylene is an example of : (CO3)

a) Alloy b) Ceramic

c) Polymer d) Semiconductor

Q.3 Which material has good corrosion resistance? (CO2)

a) Iron b) Zinc

c) Stainless steel d) Copper

Q.22 What are poly propylene ? Give their applications. (CO3)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Explain in detail the classification of materials and provide examples for each type. (CO1)

Q.24 Explain any two physical and chemical properties of materials in detail? (CO2)

Q.25 Explain the properties of materials suitable for handling acids in the process industry. (CO4)

Q.4 What property measures a material's resistance to electrical flow? (CO1)

a) Conductivity b) Dielectric strength

c) Resistivity d) Elasticity

Q.5 Which type of iron is known for its high ductility and weldability? (CO2)

a) Cast iron b) Pig iron

c) Wrought iron d) Stainless steel

Q.6 Which polymer is commonly used in packaging materials? (CO3)

a) Polycarbonate b) LDPE

c) PVC d) HDPE

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define specific heat. (CO1)

Q.8 What is the primary characteristic of metals that makes them different from non-metals? (CO2)

Q.9 Mention one use of cast iron. (CO2)

Q.10 State an example of a composite material. (CO3)

Q.11 Define dielectric constant. (CO1)

Q.12 Name a acid resistant material used in the process industry. (CO4)

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Describe the present and future needs of material science. (CO1)

Q.14 Discuss any alloys with uses. (CO2)

Q.15 Explain the factor affecting physical properties of steel. (CO2)

Q.16 What are ferrous metals? Discuss any one. (CO2)

Q.17 Discuss the properties and uses of aluminum. (CO2)

Q.18 What are properties of borosilicate glass? (CO3)

Q.19 Explain the importance of polymers in the industry. (CO3)

Q.20 Describe the role of material selection in handling hydrochloric acid. (CO4)

Q.21 What are the main properties of HDPE and LDPE? (CO3)