Q.24 Explain silica and Mica dust particulates.
Q.25 Explain processing of particulate reinforced composites.
Q.26 Discuss advantages of Polymer blending.
Q.27 Write advantages of polymer composites over conventional materials.
Q.28 Explain the importance of fibers reinforcement in polymer composites.
Q.29 Discuss advantages of carbon fibers over glass fibers.
Q.30 discuss NR/SBR blend.
Q.31 Explain various types of glass fibers.
Q.32 Discuss properties and compositions of Nylon fibers.
Q.33 Explain hand lay up technique for FRP with diagram.
Q.34 Explain properties and applications of plastic - plastic laminate.
Q.35 Discuss Nano-composites with their application and scope.

SECTION-D

Note : Long Answer type question. Attempt any two questions. (2x10=20)

Q.36 Explain:
a) Properties and applications of NR/SBR blend.
b) properties and application of glass fiber reinforced polyesters.

Q.37 Discuss:
a) Various forms of carbon black particulates.
b) Preparation, properties and applications of fly ash reinforced epoxies.

Q.38 Explain processing and production technique of filament winding with neat sketch.

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4th Sem / Polymer/Rubber Technology
Subject : Polymer composites

Time : 3 Hrs. **M.M. : 100**

SECTION-A

Note : Multiple choice questions. All questions are compulsory. (10x1=10)

Q.1 Composites can be classified based on _____
a) Matrix type
b) Reinforcement constituent
c) Matrix type & reinforcement constituent
d) Neither on matrix type nor on reinforcement constituent type.

Q.2 Following is the earliest knows fibers used to reinforce materials
a) Glass fibers b) Carbon fibers
c) Plant fibers d) Wood fibers

Q.3 Rain forcements for the composites can be
a) Fibres b) Fabrics particles
c) Whiskers d) All of the above

Q.4 Which of the following type of composite is not classified under the category of a number of layers?
a) Unidirectional fiber reinforced
b) Laminar
c) Sandwich panels
d) Glass-fiber reinforced

Q.5 Filament winding is _____
a) Used to produce cylindrical surfaces only
b) Used to produce curvature surfaces only
c) A process in which resin-impregnated fibers are wound over a rotating mandrel at the desired angle
d) None of the above

Q.6 Filament winding process is not applicable for ____
a) Thermosetting polymers
b) Thermoplastics
c) Thermosetting polymers and thermoplastics
d) None of the above

Q.7 Which of the following is not an advantage of composites?
a) Easy to manufacture and durable.
b) Excellent thermal, mechanical & chemical properties.
c) Heavy-weight and non-versatile
d) Economical and tailor made.

Q.8 Select the process which is an open mold process.
a) Reaction injection molding
b) Hand lay-up
c) Transfer molding
d) Injection molding

Q.9 The working principle of pultrusion is almost similar in nature to which one of the following plastic forming processes?
a) Blow molding b) Extrusion
c) Injection molding d) Thermoforming

Q.10 Lay-up process is used where _____
a) Low production volume and low performance is required.
b) Low production volume and high performance is required.
c) High production volume and high performance is required.
d) High production volume and low performance is required.

SECTION-B

Note : Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Name two fibers used in FRP industry.
Q.12 _____ is an example of coupling agent.
Q.13 Expand GRP.
Q.14 CNT stands for _____.
Q.15 Give an example of Plastic - paper laminate.
Q.16 State one application of plastic - metal Laminate.
Q.17 Give two properties of Carbon fibers.
Q.18 Name two types of Glass fibers used in FRP industry.
Q.19 Name two main constituents used in fly ash.
Q.20 _____ is an example of natural fiber.

SECTION-C

Note : Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Explain Spray up technique for FRP production.
Q.22 Discuss NBR/PVC blend.
Q.23 Explain preparation and properties of carbon fibers filled epoxy FRP.