

Paper Id: **140721**Roll No:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

BTECH
(SEM VII) THEORY EXAMINATION 2019-20
COMPOSITE MATERIALS

Time: 3 Hours**Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 7 = 14**

a.	Write down the function of matrix.
b.	Rite down the function of fiber reinforcement.
c.	Write down the properties of organic matrix composites.
d.	What do you understand by prepreg layer.
e.	Define bleeder and breather piles.
f.	Explain Von mises yield criteria.
g.	Define wettability.

SECTION B**2. Attempt any three of the following: 7 x 3 = 21**

a.	What do you mean by infiltration. Explain squeeze casting infiltration. How squeeze casting infiltration differ from gas pressure infiltration.
b.	Classify the composites based on dispersed phase. Also compare composite and metal.
c.	How Polyethylene terephthalate (PET) and Polypropylene (PP) produced. Also write down their properties and application.
d.	Explain the properties and application of carbon fiber, fiber glass and ceramics fiber.
e.	Explain filament winding with help of neat sketch. Also write down the limitations and advantages of this process.

SECTION C**3. Attempt any one part of the following: 7 x 1 = 7**

(a)	Explain the composition, properties and applications of polyamide resin and phenolic resin
(b)	Take a daily use thermoset and thermoplastic product and list down their relative properties.

4. Attempt any one part of the following: 7 x 1 = 7

(a)	Explain the selection criteria of reinforcement. Also explain the application of quartz and silica fiber reinforcement.
(b)	Compare laminar composites and particulate composites on the basis of their process parameters.

5. Attempt any one part of the following: 7 x 1 = 7

(a)	Explain diffusion bonding method of fabrication of metal matrix composite.
(b)	What do you mean by co-deposition. Explain method of co-deposition. How metal matrix composites are prepared by co deposition method.

6. Attempt any one part of the following: 7 x 1 = 7

(a)	What do mean by pultrusion. What are the different method of pultrusion. Also write down their advantages and disadvantages.
(b)	Explain the procedure of shear testing of composite in detail.

7. Attempt any one part of the following: 7 x 1 = 7

(a)	Write down the equation of motion at equilibrium state of laminated plates analysis.
(b)	Write a short notes on ceramics matrix composites manufacturing.