

**B.TECH  
(SEM VII) THEORY EXAMINATION 2022-23  
BIOECONOMICS**

*Time: 3 Hours**Total Marks: 100***Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief. 2 x 10 = 20**

- (a) What are filters?
- (b) What do you mean by bioeconomics?
- (c) Define entrepreneurship.
- (d) What is fossil fuel?
- (e) Explain the term biofuel.
- (f) What is biotechnology?
- (g) Explain sustainable development.
- (h) What do you mean by innovation?
- (i) What do you mean by primary production?
- (j) What is transdisciplinarity?

**SECTION B****2. Attempt any three of the following: 10 x 3 = 30**

- (a) Explain descriptive terminology of filter. Why we use analog filters, circuit element & scaling.
- (b) Explain Inter- and transdisciplinarity in Bioeconomy & research approaches.
- (c) Explain food security and healthy nutrition in the context of the bioeconomy.
- (d) What is the advantage of biobased products compared to fossil-based products? Is the production process of biobased products more sustainable? Explain.
- (e) What do you mean by economic growth? Explain development, and innovation in terms of bioeconomy.

**SECTION C****3. Attempt any one part of the following: 10 x 1 = 10**

- (a) Explain Operational amplifiers with resistive feedback: Noninverting and Inverting.
- (b) Explain circuit simulation & modeling. Write application of Op-amp resistor circuits.

**4. Attempt any *one* part of the following: 10 x 1 = 10**

- (a) Explain role of bio based Economy in sustainable development.
- (b) Explain primary production, processing of biobased resources & entrepreneurship in biobased products.

**5. Attempt any *one* part of the following: 10 x 1 = 10**

- (a) Explain inter and trans-disciplinarity in Bioeconomy & research approaches.
- (b) Explain environmental economics and the Role of Government in it.

**6. Attempt any *one* part of the following: 10 x 1 = 10**

- (a) Explain markets, sustainability management and entrepreneurship opportunity in biobased product.
- (b) What are the sustainable and innovative use of biomass and biological knowledge to provide food, feed & industrial products? Explain.

**7. Attempt any *one* part of the following: 10 x 1 = 10**

- (a) Explain importance of biotechnology for the bioeconomy.
- (b) Explain biobased resources and value chains. Also write use of biomass for the production of fuel and chemicals.