

Roll No:

BTECH

(SEM VI) THEORY EXAMINATION 2023-24

TRIBOLOGY

TIME: 3 HRS

3.

M.MARKS: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably. **SECTION A**

1.	Attempt <i>all</i> questions in brief.	$2 \ge 10 = 20$
a.	Define the term 'Tribology'.	02
b.	State the functions of lubricants.	02
c.	What are the causes of friction?	02
d.	What do you understand by fatigue wear?	02
e.	Describe jet lubrication.	02
f.	Explain elasto-hydrodynamic lubrication.	02
g.	What are the solid lubricants?	02
h.	What are the characteristics of wear resistant coatings.	02
i.	Describe the term friction stability.	02
j.	What do you understand by hysteresis losses.	02
	SECTION B	l l

2.	Attempt any <i>three</i> of the following:	$3 \times 10 = 30$
a.	How can lubricants be classified? Briefly explain each.	10
b.	Explain the adhesion theory of friction with neat diagram.	10
c.	Explain the theory of hydrodynamic lubrication with neat sketch.	10
d.	Explain the properties of solid lubricants.	10
e.	Explain the concept of friction angle in detail.	10

Attempt any *one* part of the following:

N						
	1	X	10	=	10	
					10	

N

a.	Explain the different lubrication regimes in detail with neat sketch.	10
b.	What do you understand by Viscosity? Explain any one of the methods to measure	10
	viscosity.	
4.	Attempt any <i>one</i> part of the following: 1 x 10 =	- 10
a.	List and briefly describe the types of wear encountered in engineering practice.	10
b.	Describe the different approaches to friction control and wear prevention.	10
5.	Attempt any <i>one</i> part of the following: 1 x 10 =	- 10
a.	Explain the concept of journal bearing. Describe the formulae for the minimum oil	10
	film thickness for this bearing.	
b.	Describe this term in detail: (i) Hydrostatic lubrication, (ii) Squeeze film lubrication.	10
6.	Attempt any <i>one</i> part of the following: 1 x 10 =	- 10
6. a.	Attempt any one part of the following:1 x 10 =Explain the different techniques for producing wear resistant coatings,	10 10
6. a. b.	Attempt any one part of the following: 1 x 10 = Explain the different techniques for producing wear resistant coatings, Describe the friction and wear characteristics of lamellar solids.	10 10 10
6. a. b. 7.	Attempt any one part of the following:1 x 10 =Explain the different techniques for producing wear resistant coatings,Describe the friction and wear characteristics of lamellar solids.Attempt any one part of the following:1 x 10 =	10 10 10 10
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