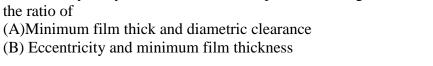
Enrollment No: Exam Seat No: C. U. SHAH UNIVERSITY						
		amination-2021				
Subject Nam	e : Industrial Tribology					
Subject Code: 4TE07ITR1		Branch: B.Tech (Mechanical)				
Semester: 7	Date: 17/12/2021	Time: 02:30 To 05:30	Marks: 70			
(2) Instru (3) Draw	_	any other electronic instrument is prohir book are strictly to be obeyed. necessary) at right places.	bited.			
Q-1	Attempt the following quest	ions:	(14)			
a)	The meaning of the Greek wo	ord "Tribos" from which the word Tribo	ology			
b)		the purpose of Tribology? Increase safety and reliability				
c)	The force of friction acts in ditthe object.	Increase heat generation irection to the direction of motion	of			
d)	The co efficient of friction (µ)	Perpendicular (D) Downwards) is equal to (θ is angle of friction)				
e)	 (A)tanθ (B)sinθ (C) cotθ In which of the following case (A) Friction between shoes ar (B) Friction between belt and 	es, friction is desirable ad drum in break pulley				
f)	(C) Friction between road and(D) All of aboveAs per laws of dry friction, th(A) Depends upon the nature(B Is independent of the sliding)	e frictional force of sliding surface ng velocity				
g)	(A)Hydrodynamic bearing (carrying very heavy loads at slow speed	d is			
h)		ication in a journal bearing the attitude	is			





			(C) Eccentricity and radial clearance			
			(D) Eccentricity and diametric clearance			
		i)	Which of the following is not a type of roller contact bearing?			
		•	(A)Ball bearing (B) Journal bearing			
			(C) Roller bearing (D) All of above			
		j)	Which lubricants are obtained by fractional distillation of petroleum?			
		J	(A) Mineral oils (B) Fatty oils			
			(C) Solid lubricants (D) All of above			
(C) Solid lubricants (D) All of above k) The flash point of lubricant must be the working temperature.						
		(A) Well below (B) Well above (C) Equal to (D) None of above				
		1)	Scratching is a form of			
		1)	(A) Adhesive wear (B) Corrosive wear			
			(C) Abrasive wear (D) All of above			
		m)	For delicate instruments the suitable lubricant is			
		111)	(A) Heavy cutting oil (B) Thin vegetable oil			
			(C) Light cutting oil (D) Sunflower oil			
		n)	Asperities are basically			
		11)	÷ · · · · · · · · · · · · · · · · · · ·			
A 44 0×			(C) Corner of Surface (D) Hole in surface four questions from Q-2 to Q-8			
Auei	прі	any	•			
Q-2			Attempt all questions (14			
	A		Define friction. Explain different laws of friction. 07			
	В		Explain Stick-Slip friction with neat sketch. Give its reason and example of real			
			life.			
Q-3			Attempt all questions			
	\mathbf{A}		Attempt all questions Explain tribological problems in industry.			
	B		Explain tribological problems in industry. 0 Explain surface profilometry with block diagram. State its advantages 0			
			and disadvantages.			
Q-4			Attempt all questions (14			
_	\mathbf{A}		Define wear. Write example of desirable and undesirable effect of wear. 03			
	В		Explain adhesive wear. 04			
			Explain factors affecting on wear rate. 07			
Q-5			Attempt all questions (14			
	A		Explain elastohydrodynamic lubrication and also state its applications. 07			
	В		Define lubricant. Write the name of physical and chemical properties of			
			lubricant.			
			Which difficulties arise in recycling of used oils?			
Q-6			Attempt all questions (14			
	\mathbf{A}		Write comparison of long and short journal bearing. 07			
	В		A petroff's sleeve bearing consists of a sleeve having a bore diameter of 07			
			100.1mm and a length of 100mm. a shaft having 100mm diameter			
		supports a load of 4000N. a shaft runs at 2880rpm in the sleeve. If the				
			frictional torque on the shaft is 10Nm, find			
			1. The absolute viscosity of lubricant			
			2. The bearing pressure			
			3. The coefficient of friction			
			The power lost in hearing			
			/I The neguer leef in hearing			



Q-7		Attempt all questions	(14)
	\mathbf{A}	Explain mechanism of pressure development in hydrodynamic thrust	07
		bearings.	
	В	Explain hydrodynamic bearing with neat sketch. State its advantages,	07
		disadvantages and applications of it.	
Q-8		Attempt all questions	(14)
	\mathbf{A}	What is importance of tribology in industry?	07
	В	Estimate coefficient of friction due to adhesion(f _a).	07

