

- (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?
 (A) Mineral oils (B) Fatty oils
 (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
- l) Scratching is a form of
 (A) Adhesive wear (B) Corrosive wear
 (C) Abrasive wear (D) All of above
- m) For delicate instruments the suitable lubricant is
 (A) Heavy cutting oil (B) Thin vegetable oil
 (C) Light cutting oil (D) Sunflower oil
- n) Asperities are basically
 (A) Sharp tips on surface (B) Edge of surface
 (C) Corner of Surface (D) Hole in surface

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
- A Define friction. Explain different laws of friction. 07
- B Explain Stick-Slip friction with neat sketch. Give its reason and example of real life. 07
- Q-3 Attempt all questions (14)**
- A Explain tribological problems in industry. 07
- B Explain surface profilometry with block diagram. State its advantages and disadvantages. 07
- Q-4 Attempt all questions (14)**
- A Define wear. Write example of desirable and undesirable effect of wear. 03
- B 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
- B Define lubricant. Write the name of physical and chemical properties of lubricant. 04
- Which difficulties arise in recycling of used oils? 03
- Q-6 Attempt all questions (14)**
- A Write comparison of long and short journal bearing. 07
- B A petroff's sleeve bearing consists of a sleeve having a bore diameter of 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
 4. The power lost in bearing



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

