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BEARING MATERIAL

2MARKS

Q.1.Write the composition of lead base bearing metal?

Ans: Composition

Pb=75%

Sb=15%,

Sn=10%

Q.2. Write down four properties of bearing material?

Ans: Properties:

- Possess low co-efficient of friction.
- Provide hard,wear resistant surface with a tough core.
- Have high compressive strength
- Be able to bear shocks and vibration.

5 MARKS

Q.1.Write any four desirable properties of bearing material?

Ans: Properties of bearing material.

- A bearing material
- Possess low co-efficient of friction
- Provide hard ,wear resistance surface with a tough core.
- Have high compressive strength
- Have high fatigue strength
- Be able to bear shocks and vibration.

Q.2.Classify bearing materials?

Ans-Bearing metals are

- Lead or metals are

Example – White metal,Babbitt's metal

- (ii) Cadmium –based alloys .

Ex: Automobiles and air craft industries

- (iii) Aluminum –based alloys

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Example –Bearing is diesel engines and tractors.

- (iv) Silver-based alloys

Examples:-Connecting rod bearing of air craft engine.

- (v) Copper- based alloys

Examples:-Bronze,bearing in railway.

- (vi)Sintered bearing materials-

Examples:-sintering iron bearing .

- (vii) Non metallic bearing materials-

Examples:-Teflon and nylon.

7 MARKS

Q.1. Write the composition, properties and uses of copper base bearing?

Ans:Copper based bearing metal:-

- Composition:typical composition of bearing bronze are;

	I	II
Cu	80%	85%
Sn	10%	15%
Pb	10%	-

- The term bronze covers a large number of copper alloy with varying percentages of sb,znand pb. bronze is done of oldest known bearing materials.

Bronze:

- It is easily worked.
- It has good corrosion resistance and
- It is reasonably hard.
- Tin bronze (10 to 24% tin, remainder copper) is used in the machine and engine industry for bearing bushes made from thin walled drawn tubes.

Copper based alloys are employed for making bearings required to resist behavior pressures such as in railways.

Q.2.Describe the composition,properties and use of copper base bearing metal and tin base bearing metal?

Ans:Copper based bearing metal

- Composition:

I	II

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Cu 80% 85%

Sn 10% 15%

Pb 10% -

- ❖ The term bronze covers a large number of copper alloys with varying percentages of Sn, Zn, and Pb.bronze is one of the oldest known bearing materials.

Bronze:

- Is easily worked.
- Has good corrosion resistance andIs reasonably hard
- Tin bronze (10 to 14% tin, remainder copper) is used in the machine and engine industry for bearing bushes made from thin walled drawn tubes.
- Copper based alloy are employed for making bearing required to resist heavier pressures such as in railways.
- Tin base bearing material:

Composition:

Sn -88%

Sb - 8%

Cu - 4%

Tin based alloys preferred for higher load and speeds.

- They posses low co-efficient of friction.
- They also posses good ability to embed dirt
- Good conformability to journal.
- Good corrosion resistance
- Very good seizure resistance etc.

Tin based alloys are used in high speed engines steam turbines.