

# Government Polytechnic Mayurbhanj, Tikarpada

## CHAPTER WISE QUESTION BANK

SUBJECT:-DESIGN OF MACHINE ELEMENT

### CHAPTER-1 (INTRODUCTION)

#### 2 Marks question

1. Define machine design and classify.
2. State the mechanical properties of the material.
3. State the yielding stress.
4. State factor of safety.
5. State the mode of failure of design.
6. State the general design procedure in flow diagram.

#### 5 Marks question

1. Draw the strain stress curve of the ductile material and brittle and show the silent point of it.
2. State the factor governing the design of mechanic elements.
3. Describe the general design procedure.

### CHAPTER-2 (DESIGN OF FASTENING ELEMENTS)

#### 2 Marks question

1. State classification of joint.
2. State the meaning of rivet and state the types of riveted joint.
3. State the turn used in riveted joint.
4. State the meaning of welding and state the type of welding.
5. Classify the welding joint.
6. State defect types of welding.

#### 5 Marks question

1. Compare the riveted joint with welded joint.
2. Explain the design procedure for the transverse welding joint.
3. Explain the design procedure for the parallel fillet welded joint.

### **10 Marks question**

1. Explain the mode failure of riveted joint.
2. Explain the mode of failure of welded joint.

### ***CHAPTER-3(DESIGN OF SHAFT AND KEYS)***

#### **2 Marks question**

1. State the function of shift.
2. State the material use for shift.
3. State the properties of good shift.
4. State the standard size of shift.
5. State the function key and types of it.

#### **5 Marks question**

1. Describe failure of key effect of key way.
2. State the specification of parallel key, Gib head key.

#### **10 Marks question**

1. Design a rectangular key considering its failure against shear and crushing.
2. Design rectangular sunk key by using relation for given diameter shaft.

### ***CHAPTER-4 (DESIGN OF COUPLING)***

#### **2 Marks question**

1. State the meaning of coupling.
2. State the need of coupling
3. Classify the coupling.

#### **5 Marks Question**

1. State the requirement of a good shaft coupling.

#### **10 Marks Question**

1. Design of Sleeve or Muff coupling
2. Design of clamp or compression coupling.

### ***CHAPTER-5 (DESIGN OF CLOSED HELICAL SPRING)***

2Marks question

1. State the material used for helical spring.
2. What is SWG
3. What is meaning of spring rate.

5Marks Question

1. Write down about surge in spring
2. State the terms used in compression spring

10Marks Question

1. Design for stress in helical spring of circular wire
2. Design for deflection of helical spring of circular wire.