

Lesson Plan

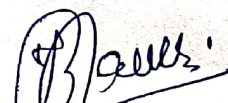
| Name of the Institute: | | C. V. Raman Polytechnic |
|---------------------------------------|--|-----------------------------------|
| Department: | | Mechanical Engineering |
| Semester/Division/Branch: | | 5 th Sem/ME |
| Subject Name with code: | | Design of Machine Elements (Th-2) |
| Total No. of Class (Required): | | 60 |
| Faculty Name: | | Mr.RadhamohanKabisatapathy |
| Class No. | <i>Brief description of the Topic/Chapter to be taught</i> | Remarks |
| 1 | Introduction to Machine Design and its classification. | |
| 2 | Different mechanical engineering materials used in design and their uses. | |
| 3 | Mechanical engineering materials used in design and their mechanical and physical properties | |
| 4 | Define working stress, yield stress | |
| 5 | ultimate stress & factor of safety and stress –strain curve for M.S & C.I. | |
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| 7 | Modes of Failure (By elastic deflection, general yielding & fracture) | |
| 8 | Modes of Failure (By elastic deflection, general yielding & fracture) | |
| 9 | State the factors governing the design of machine elements. | |
| 10 | Describe design procedure. | |
| 11 | State types of welded joints, | |
| 12 | State advantages of welded joints over other joints. | |
| 13 | Design of welded joints for eccentric loads. | |
| 14 | State types of riveted joints and types of rivets. | |
| 15 | Describe failure of riveted joints. | |

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| 16 | Determine strength & efficiency of riveted joints. | |
| 17 | Design riveted joints for pressure vessel. | |
| 18 | Numerical on Welded Joint. and Riveted Joints. | |
| 19 | Numerical on Riveted Joints | |
| 20 | State function of shafts, State materials for shafts | |
| 21 | Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension; | |
| 22 | Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity | |
| 23 | Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear stress, (ii) Combined bending tension; | |
| 24 | Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity | |
| 25 | State standard size of shaft as per I.S. | |
| 26 | State function of keys, types of keys & material of keys | |
| 27 | Describe failure of key, effect of key way | |
| 28 | Design rectangular sunk key considering its failure against shear & crushing | |
| 29 | Design rectangular sunk key considering its failure against shear & crushing | |
| 30 | Design rectangular sunk key considering its failure against shear & crushing | |
| 31 | Design rectangular sunk key by using empirical relation for given diameter of shaft | |
| 32 | State specification of parallel, gib-head key, taper key as per I.S. | |
| 33 | State specification of parallel, gib-head key, taper key as per I.S. | |
| 34 | State specification of parallel, gib-head key, taper key as per I.S. | |
| 35 | Numerical on Design of Shaft and keys. | |
| 36 | Numerical on Design of Shaft and keys. | |
| 37 | Numerical on Design of Shaft and keys. | |

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| 38 | Design of Shaft Coupling | |
| 39 | Design of Shaft Coupling | |
| 40 | Requirements of a good shaft coupling | |
| 41 | Requirements of a good shaft coupling | |
| 42 | Types of Coupling | |
| 43 | Types of Coupling | |
| 44 | Design of Sleeve or Muff-Coupling | |
| 45 | Design of Sleeve or Muff-Coupling | |
| 46 | Design of Clamp or Compression Coupling | |
| 47 | Design of Clamp or Compression Coupling | |
| 48 | Simple numerical on muff coupling | |
| 49 | Simple numerical on muff coupling | |
| 50 | Simple numerical on clamp coupling | |
| 51 | Materials used for helical spring. | |
| 52 | Materials used for helical spring. | |
| 53 | Standard size spring wire. (SWG) | |
| 54 | Terms used in compression spring | |
| 55 | Stress in helical spring of a circular wire | |
| 56 | Stress in helical spring of a circular wire | |
| 57 | Deflection of helical spring of circular wire | |
| 58 | Surge in spring | |
| 59 | Numerical on design of closed coil helical compression spring. | |
| 60 | Numerical on design of closed coil helical compression spring. | |



Signature of the Faculty



Signature of the H.O.D