Sem VIII Mechanical Systems
Sem VIII) Mechanical Sveta
BE 12022 1) Question No. 1:
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N.D. 2) Solve Any Three from re
3) Use of standard data book in Five on Total Marks: 80
permitted psg. Med ps
N.B. 2) Solve Any Three from remaining Five questions. 3) Use of standard data book like PSG, Mahadevan and Kale Khandare is 4) Assume suitable data if necessary, giving justification Answer any Four from the following
th Hecessary, giving the Khandare is
Answer any Four from the following
What is bend in rope pulley system of hoisting mechanism? State the effect of bend on 5 Why cavitation occurs in a centrifical to system design.
a) the rope life.
the rope me. Explain the optimum design concept in system design. Why cavitation occurs in a centrifugal pump? State the effect of bend on 5
Explain the optimum design concept in system design. Why cavitation occurs in a centrifugal pump? State the remedial measures for the same. Why geometric progression is preferred for the specific progression. by design?
Why geometric progress of piston rings and the
e) Willy geometric progression is preferred for the same. 5
5
List the different types of piston rings and their functions. Why geometric progression is preferred for the speed selection in the multi speed gear Explain the rope construction in hoisting rope with example. b) Select a suitable hook with trapezoidal cross section.
Colocts suitable hools and hoisting fone with
b) Select a suitable mook with trapezoidal cross section
section for design noisting load of 50 kN. Also calculated the distribution and check it at most critical cross 15
State the faming effecting that the
a) State the fanning effect in the belt conveyor system. b) Determine the width of the conveyor belt and motor capacity for the following 5 specification
macification belt and motor capacity for the fall-
specification Material to be conveyed Capacity Inclination Centre to Centre distance (4 a) Explain the ovality of the piston with neat sketch b) Determine bore diameter and design a piston for a 4-stroke, single cylinder, water cooled, vertical diesel engine with following specifications: Indicated power = 20 kW Speed = 1200 rpm
Material to be conveyed : Coal
Capacity Simplify : 150 TPH Simplify Simplify Simplify
Inclination of the degree of t
Material to be conveyed Capacity Inclination Centre to Centre distance 10 degree Cooled, vertical diesel engine with following specifications: Indicated power = 20 kW Speed = 1200 rpm Compression Ratio = 14 15 a) Describe the working of the gear pump with neat sketch b) Design a volute casing for a centrifugal pump having impeller with outer diameter 320 15 mm and inner diameter 160 mm. The specifications for the pump are Total manometric head: 20 m Discharge: 900 LPM Motor speed: 1440 rpm 15 Cooled 16 mm The specifications for the pump are Total manometric head: 20 m Discharge: 900 LPM Motor speed: 1440 rpm 16 manometric progression ratio 20
Evaluin the avality of the niston with and the state of the six of
1) Determine hore diameter and decide a view of
b) Determine bore diameter and design a piston for a 4-stroke, single cylinder, water 15
cooled, vertical dieser engine with following specifications:
Indicated power = 20 k w
Speed = 1200 rpm
Compression Ratio = 14 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Doil a the gent num with neat sketch?
a) Describe the working of the gear pump with heat sketch.
b) Design a volute casing for a centrifugal pump having impeller with outer diameter 320 15 mm and inner diameter 160 mm. The specifications for the pump are Total manometric head: 20 m Discharge: 900 LPM Motor speed: 1440 rpm 20
mm and inner diameter 100 limit. The spectrum and inner diameter 100 limit.
Total manometric head: 20 III
Discharge: 900 LPM A A A A A A A A A A A A A A A A A A A
Motor speed: 1440 rpm 20 20
Motor speed: 1440 rpm (6 a) A six speed gear box is to be designed for a machine tool with geometric progression ratio 20 (8 1 41 and N = 1440 rpm
3) Asix speed gear box is to be design.
as 1.41 and N _{max} = 1440 1pm
1. Draw and Select suitable sure or depend chart
11. Draw a ray diagram and speed
Determine the number of towns
Draw the deviation diagram of the deviation di
b) Design a volute casing for a centification for the pump are mm and inner diameter 160 mm. The specifications for the pump are Total manometric head: 20 m Discharge: 900 LPM Motor speed: 1440 rpm as 1.41 and N _{max} = 1440 rpm i. Draw and Select suitable structural diagram. ii. Draw ary diagram and speed chart iii. Determine the number of teeth omeach gear iv. Draw the deviation diagram