Roll No. ..... Total No. of Pages : 2

BT-6/M09 9856

Theory and Design of Textile Mechinery

Paper : TT-312

Time : Three Hours] [Maximum Marks : 100

Note :- Attempt FIVE questions in total with at least ONE question from each unit.

UNIT-I

1. (a) With a clear diagram explain the construction of V-belt and write the function of each part. 8

   (b) Write the advantages and disadvantages of chain and belt drive. 6

   (c) What is tape drive, where it is used ? 6

2. (a) Discuss in detail the force analysis of gear drive. 10

   (b) Define :-

   (i) Pitch cylinder (ii) Pitch (iii) Addendum (iv) Dedendum (v) Root clearance of a gear. 10

UNIT-II

3. (a) Discuss in detail about different types of cams and their relative advantages and disadvantages. 8

   (b) Discuss about cone and centrifugal clutches. 8

   (c) Discuss about the materials used to manufacture clutches. 4

4. (a) Classify different kinds of bearing and explain their working principle. 12

   (b) How lubrication works in bearing mechanism ? 8

UNIT-III

5. (a) Derive an experssion to calculate strain energy stored in a torsion bar. 15

   (b) Define ductile and brittle material. 5

6. Define bending regidity, how it is measured ? Discuss its relevance with textile material. 20

UNIT-IV

7. Draw a shedding cam for 3-end twill weave. Assume all the data required. Write down the steps followed to draw the cam. 20

8. For crank beat-up mechanism, derive an expression for the displacement of sley (s) in terms of crank arm length (r), connecting rod length (l) and crank angle (Q). 20