

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2024

Subject Code:3152911

Date:25-11-2024

Subject Name:Theory of Textile Machines

Time:10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) What is tape drive, Where it is used? **03**
(b) Explain briefly about eccentricity of sley. **04**
(c) What are advantages and disadvantages of belt and chain drive? **07**

- Q.2** (a) Define term: pitch circle, circular pitch and addendum circle. **03**
(b) Describe the construction of reverted gear train **04**
(c) Write down classification of gear. What are advantages and disadvantages of gear drive? **07**

OR

- (c) Explain various types of belt drives used in textile industry with neat sketch. **07**
Q.3 (a) State any two applications where timing belt use in textile. **03**
(b) Discuss about simple and compound gear train. **04**
(c) What do you mean by epicyclic gear train? Discuss with neat sketch. **07**

OR

- Q.3** (a) List different types of cam. Also State the applications of Cam. **03**
(b) Explain linear displacement and angular displacement with suitable example. **04**
(c) Write down the classification of cam and follower with brief descriptions. **07**
Q.4 (a) What are the friction clutches? State application of clutches. **03**
(b) What is basic difference between clutch and brakes? **04**
(c) What is centrifugal clutch? Discuss what are its advantages? **07**

OR

- Q.4** (a) How lubrication works in bearing? **03**
(b) Explain kinematic of sley with suitable diagram. **04**
(c) Classify the type of bearing and explain their working principle. **07**
Q.5 (a) What are the reasons for excessive vibration in textile machine? **03**
(b) Discuss about static and dynamic friction in brief. **04**
(c) Describe important steps in designing of shedding tappet for plain weave with suitable sketch. **07**

OR

- Q.5** (a) Discuss briefly about centre of gravity. **03**
(b) Define term: force, momentum, work and power. **04**
(c) Describe differential gear in speed frame with a sketch. **07**
