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B.E. Sixth Semester (Production Engineering) (CGS) -

10936 : Machine Tool Design : 6 PE 03

P. Pages : 2 **AU - 2750**

Time : Three Hours * 0 6 0 3 * Max. Marks : 80

Notes : 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.
4. Use of pen Blue/Black ink/refill only for writing the answer book.

SECTION – A

1. a) State and explain law of gearing. **6**

b) What are the various power transmission devices used in the industry? Give brief classification. **7**

OR

2. a) Give classification on belt drive with respect to industry. **6**

b) Write the design procedure of chain drive. **7**

3. a) What are advantages and disadvantages of roller contact over sliding contact bearing. **7**

b) Explain with the help of neat sketch of operations. Of internal expanding shoe brakes. **6**

OR

4. a) Explain with the help of neat sketch the principle of operation rolling contact bearings. **7**

b) Classify clutches. **6**

5. a) Give general classification of machine tools. **7**

b) What are various factor used for selecting best structural diagram. **7**

OR

6. a) Classify the feed boxes. **7**

b) Why is geometric progression commonly used in machine drives? Explain in detail. **7**

SECTION – B

7. Draw structural diagram of machine tool speed box for n, minimum = 16 rpm n – Maximum = 770 rpm and $\phi = 1.26$. Which layout best and why. **13**

OR

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8.		Design feed box for a feed ranging from 0.10 to 1.11 mm/rev. In two stages taking $\phi = 1.41$ Draw the structural. Diagram and give justification for selecting the proper structural formula.	**13**
9.	a)	Explain the various sideways profiles and their combination with applications.	**7**
	b)	Explain the commonly used shapes of slide ways in machine tools.	**7**

OR

10.	a)	What are the functions and types of guide ways.	**7**
	b)	What are the functions and requirement's of machine tool structures.	**7**
11.	a)	What are the advantage of thermal relay in machine tools.	**6**
	b)	Explain the regulation of speed in electrical control ckt.	**7**

OR

12.	a)	Name various alignment tests to be performed on a lathe.	**7**
	b)	Discuss the procedure to be followed while carrying out acceptance test.	**6**

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