

Printed Pages : 2



EAG-304

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 180315**

Roll No.

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**B.Tech.**

(SEM. III) (ODD SEM.) THEORY  
EXAMINATION, 2014-15  
**THEORY OF MACHINE**

Time : 2 Hours]

[Total Marks : 50

**Note:** The question paper is divided into three sections.  
Attempt each section.

**SECTION-A**

1. Attempt the following short answer type questions:  $5 \times 2 = 10$ 
  - (a) Define element or link by giving examples.
  - (b) Give equations which only apply to kinematic chains in which lower pairs are used.
  - (c) What do you understand by angular velocity of precession and gyroscopic acceleration.?
  - (d) What is the coefficient of friction for leather and fabric belts on cast iron pulley.?
  - (e) What do you understand by governor stability and Isochronism ?

**SECTION-B**

2. Attempt any three parts of the following: **5×3=15**
- (a) Why the balancing of revolving and reciprocating masses are necessary? Explain the hammer blow used for balancing.
  - (b) Explain the construction and working of centrifugal governor
  - (c) Describe multiple disc clutch with the help of diagram.
  - (d) Discuss the terminologies used in cam - follower system.

**SECTION-C**

3. Attempt any five questions: **5×5=25**
- (a) Describe different types of followers which are used with disc cams. Discuss the advantages and disadvantages of each type.
  - (b) What is the smallest number of teeth theoretically required in order to avoid interference on a pinion which is to gear with (a) a rack, (b) an equal pinion and (c) a wheel to give a ratio of 3 to 1.?
  - (c) Write short note on (i) Creep and slip of belts on power transmission (ii) Lower and higher pairs.
  - (d) Describe the terms (1) Sensitiveness and hunting of governor. (2) Gear train.?
  - (e) What do you understand by "degree of freedom" and "Instantaneous centres" in relation to theory of machine.?