

B. Tech. 5th Semester (ME) F. Scheme Examination,

December-2017

DYNAMICS OF MACHINES

Paper-ME-301-F

Time allowed : 3 hours] [Maximum marks : 100

Note : Attempt five questions. Question number 1 is compulsory and attempt at least one question from each section.

1. Explain the following :
 - (a) Difference between flywheel and governor
 - (b) Balancing of Rotating masses
 - (c) Engine shaking forces
 - (d) Gyroscopic Forces. 5×4=20

Section-A

2. What do you understand by static and dynamic force analysis ? Explain static force analysis of planer mechanism in detail by taking some suitable example. 20
3. Derive an expression for the force acting on the crank by the connecting rod in case of an reciprocating engine. 20

Section-B

4. What is balancing ? Explain graphical and analytical methods of balancing of rotating components. 20
5. How V-type engines are balanced ? Explain in detail. What is firing order ? 20

Section-C

6. What do you understand by Governor ? What are the different characteristics of Centrifugal Governor? Also explain different types of Centrifugal Governor. 20
7. What do you understand by Dynamometer ? Explain its different types with labelled diagram in brief. 20

Section-D

8. What is Gyroscopic stabilization ? Derive an expression for Gyroscopic force and couple. 20
9. Derive expressions for stability of four wheel and two wheel vehicle moving on curved path. 20