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B. Tech. 5th Semester (F) Scheme (ME) Examination, December–2018 DYNAMICS OF MACHINES Paper–ME-301-F

Time allowed : 3 hours] [Maximum marks : 100

Note: Attempt any *five* questions in all. *Question no.* 1 is *compulsory* and attempt at least *one* question from *each section. All questions carry equal marks.*

1. Describe the following :

(a)	Effect of shaking force.	5
(b)	What is field balancing of rotor's explain t	he
	procedure ?	5
(c)	What is difference between brake and clutch?	5
(d)	What is precision motion ?	5

Section-A

- What do you understand by static and dynamic force analysis? Give example.
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- Describe in detail the analytical and graphical method of obtaining the torque exerted on the crankshaft when weight of connecting rod is considered. 20

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Section-B

(2)

- Explain balancing of single and multicylinder engines with labelled diagram.
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- 5. A shaft carries four masses A, B, C and D of magnitude 200kg, 300kg, 400kg, and 200kg of respectively at radii 80mm, 700mm, 60mm, and 80mm in planes measured from A at 300mm, 400mm, and 700 mm. The angles between the crank measured anticlockwise are A to 45°, B to 70° and C to D 120°. The balancing masses are to be placed in planes X and Y. The distance between the planes X and A 100mm between X and Y is 400 mm and between Y and D is 200 mm. If the balance mass revolve at a radius of 100mm, find magnitude and angular positions.

Section-C

6.	(a)	Explain the working of belt transmission	n
		dynamometer.	0
	(b)	Characteristics of Centrifugal governors. 1	0
7.	(a)	Explain the Band Brake dynamometer. 1	0
	(b)	Gravity controlled and spring controlled	ed
		governor. 1	0

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Section-D

- Derive expression for stability of four wheel and two wheel moving on curved path.
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- 9. (a) Discuss the gyroscopic effect on the vessels. 14
 - (b) Gyroscopic effect on rolling.