PAPER ID-410589

Roll No:

B.VOC
(SEM V) THEORY EXAMINATION 2021-22
AUTOMOTIVE SYSTEM DESIGN

Time: 3 Hours   *Total Marks: 30*
Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1.   Attempt *all* questions in brief.   1x 6 = 6

Qno.	Question	Marks
a.	What is mechanical reliability?	1
b.	What is Design?	1
c.	What are friction clutches?	1
d.	What do you understand by rigidity?	1
e.	Define torsion property.	1
f.	Define Gear ratio.	1

SECTION B

2.   Attempt any *three* of the following: 3 x 3 = 9

Qno.	Question	Marks
a.	What do you understand by Friction clutches? Explain its types.	3
b.	Write the Designing method of Shaft subjected to bending load.	3
c.	What do you understand by Hydraulic braking system. Explain in brief.	3
d.	What are the applications of suspension system?	3
e.	Explain Johnson's method of optimum design.	3

SECTION C

3.   Attempt any *one* part of the following: 1 x 3 = 3

Qno.	Question	Marks
a.	Give the design methods of leaf spring with proper formula.	3
b.	What do you understand by universal joint? Write its application.	3

4.   Attempt any *one* part of the following: 1 x 3 = 3

Qno.	Question	Marks
a.	What do you understand by Gear drive? Explain its types.	3
b.	What do you understand by Steering system? Give the steps to design.	3

5.   Attempt any *one* part of the following: 1 x 3 = 3

Qno.	Question	Marks
a.	Define Internal expanding shoe brake with application.	3
b.	What is law of Gearing? Explain with diagram.	3

6.   Attempt any *one* part of the following: 1 x 3 = 3

Qno.	Question	Marks
a.	Give the types of Gearing method with proper example.	3
b.	Write the design consideration of Belleville springs.	3

7.   Attempt any *one* part of the following: 1 x 3 = 3

Qno.	Question	Marks
a.	Write short notes on optimum design methods.	3
b.	What do you understand by live and dead axle? Give the design of anyone	3