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BVOC
(SEM I) THEORY EXAMINATION 2021-22
MOTOR VEHICLE TECHNOLOGY –I

Time: 3 Hours**Total Marks: 30****Notes:**

- Attempt all Sections and Assume any missing data.
- Appropriate marks are allotted to each question, answer accordingly.

SECTION-A	Attempt All of the following Questions in brief	Marks (6X1=6)
Q1(a)	What is front and rear overhang?	
Q1(b)	What are the functions of clutch?	
Q1(c)	What is Clutch pedal free play?	
Q1(d)	What is gear ratio?	
Q1(e)	What is PTO shaft in a tractor?	
Q1(f)	What is the final drive ratio?	

SECTION-B	Attempt ANY THREE of the following Questions	Marks (3X3=9)
Q2(a)	What are the main components of automobile and their description?	
Q2(b)	Write Short Notes on any two of the following: i) Fluid Coupling ii) Universal joints iii) Kerb weight	
Q2(c)	Discuss the tractor transmission system.	
Q2(d)	What is the principle of epicyclic gearbox? States its advantages.	
Q2(e)	What is tubeless tyre? What are its advantages?	

SECTION-C	Attempt ANY ONE following Question	Marks (1X3=3)
Q3(a)	Explain the front wheel drive and also state its advantages and disadvantages.	
Q3(b)	Explain the construction of Maruti car chassis.	

SECTION-C	Attempt ANY ONE following Question	Marks (1X3=3)
Q4(a)	What are the common causes of troubles in clutch systems? Discuss its remedies.	
Q4(b)	The outer and inner diameters of a single plate clutch are 300 mm and 200 mm respectively. The Both sides of the clutch are effective. The maximum pressure intensity should not be more than $0.1.N/mm^2$. Find the power transmitted at 2500 rpm, If coefficient of friction is 0.3.	

SECTION-C	Attempt ANY ONE following Question	Marks (1X3=3)
Q5(a)	Explain the working and construction of synchromesh gear box.	
Q5(b)	What is torque converter? Draw a neat sketch.	

SECTION-C	Attempt ANY ONE following Question	Marks (1X3=3)
Q6(a)	What are the functions of a Hotchkiss drive? Compare its merits with torque tube drive.	
Q6(b)	Write the difference between semi-floating, three-quarter floating axle and fully floating axle?	

SECTION-C	Attempt ANY ONE following Question	Marks (1X3=3)
Q7(a)	What is wheel balancing? What will be the effect of unbalanced wheel on the vehicle at high speed?	
Q7(b)	What is the tyre pressure? Write down the advantages of filling nitrogen gas in tyres.	