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B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Fifth Semester

AE 18504 – AUTOMOTIVE TRANSMISSION*(Automobile Engineering)***(Regulation 2018/2018A)****TIME: 3 HOURS****MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Apply the basic concepts in selection of the clutch and gear box for a vehicle.	3
CO 2	Select the elements of automatic transmission based on the simplicity, application and cost.	3
CO 3	Compare the salient features of various automatic transmission systems.	3
CO 4	Discuss the need and functions of different types of automatic transmission systems used in vehicles.	3
CO 5	Explain the features of hydrostatic drive & electric drive with merits and demerits.	3

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

	CO	RBT LEVEL
1. List out the types of Transmission system.	1	1
2. Mention the advantages of diaphragm spring clutch.	1	1
3. What do you mean by drag torque?	2	2
4. Write the required properties of working fluid used in fluid coupling.	2	1
5. List out the types of gear trains.	3	1
6. What are the merits of Automatic transmission system?	3	1
7. What is the need to shift from manual to automatic transmission?	4	2
8. Differentiate between CVT and Manual Transmission.	4	2
9. Draw the layout of hydrostatic drive system.	5	1

10. Write the principle of electric torque conversion. 5 2

PART- B (5 x 14 = 70 Marks)

	Marks	CO	RBT LEVEL
11. (a) Discuss the construction and operation of a multi plate clutch with a neat sketch also mention the advantages of multi plate clutch.	(14)	1	3
(OR)			
(b) Discuss the principle of operation of synchromesh gear box with neat sketches.	(14)	1	3
12. (a) Discuss the performance characteristics of a fluid coupling and Torque Converter with the graph.	(14)	2	3
(OR)			
(b) Describe the construction and working of a multi stage torque converter with a neat sketch.	(14)	2	3
13. (a) Identify and explain the name of the gearbox where four epicyclic trains of gears interconnected which is used to transmit the power from the engine to the rear wheel.	(14)	3	3
(OR)			
(b) Mention the name of the gearbox where four magnetic clutches are used to transmit the power from the engine to the rear wheel. Discuss the construction and operation of a planetary gearbox with a neat sketch.	(14)	3	3
14. (a) Discuss and explain the Chevrolet Turboglide transmission in a vehicle.	(14)	4	3
(OR)			
(b) Discuss the Variable-diameter pulley (VDP) type CVT with a neat sketch.	(14)	4	3
15. (a) Discuss the construction and operation of a Janny hydrostatic drive with a neat sketch.	(14)	5	3
(OR)			
(b) Explain the construction and operation of a modified Ward Leonard control system with a neat sketch.	(14)	5	3

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

	Marks	CO	RBT LEVEL
16. Describe in detail, the construction and working of a 4 forward and 1 reverse constant mesh gear box with neat sketch.	(10)	1	2
