

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025***Fourth Semester**Agricultural Engineering***AI3401 – Tractors and Engine Systems***Regulations - 2021**Duration : 3 Hrs**Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)***

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Recall the primary function of crankshaft.	L1	1	2
2.	What is the firing order for four-cylinder engine?	L1	1	2
3.	Tell about the purpose of air cleaner.	L2	2	2
4.	List out the function of a governor.	L1	2	2
5.	What are the requirements of an automotive clutch?	L2	3	2
6.	What is PTO and spell its application in farm operation.	L1	3	2
7.	Write about the functions of three-point linkage.	L1	4	2
8.	What are all factors which affecting the tractive efficiency of a tractor?	L1	4	2
9.	Name the four tractor manufacturing industries in India.	L1	5	2
10.	Compare the difference between the bulldozer and tractor.	L2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Explain in detail working principle of four stroke CI (Compression Ignition) engine with sketch.	L2	1	10
	ii Compare four stroke engine and two stroke engines.	L2	1	6
	Or			
b	Summarize short notes on the following engine parts: (a) Engine (b) Piston (c) Cylinder head (d) Connecting rod (e) Crankshaft (f)Crankcase	L2	1	16
12.	a Explain in detail about valve timing diagram of four stroke diesel engine with sketch.	L2	2	16
	Or			
b i	Compare the difference between wet sump and dry sump.	L2	2	6
	ii Interpret with neat sketch the pump assisted cooling system.	L2	2	10

13.	a	Classify the different types of gearboxes and explain the working of constant mesh gearbox system with simple sketches.	L2	3	16
		Or			
	b i	Infer the requirements and functions of steering systems.	L2	3	8
	ii	Classify the different types of brakes and explain a disc brake in detail.	L2	3	8
14.	a	Demonstrate the working of hydraulic system in a tractor with a neat sketch and write its advantages and disadvantages.	L2	4	16
		Or			
	b	Explain the mechanics of chassis of the tractor with the help of suitable diagram.	L2	4	16
15.	a i	Outline the salient features and working of a power tiller.	L2	5	10
	ii	Classify the different types of bulldozer.	L2	5	6
		Or			
	b	Illustrate the Test code for performance testing of tractors and power tillers.	L2	5	16