Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

IV SEMESTER B. TECH (MECHANICAL/IP ENGG.) END SEMESTER EXAMINATIONS, APRIL 2018

SUBJECT: AUTOMOBILE ENGINEERING [MME2204]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.

1A.	With a neat sketch explain the working and functions of piston rings.	**03**
1B.	What is the role and classification of cylinder liners used in engines? Explain with the help of suitable sketches.	**03**
1C.	Draw and explain working of an overhead valve and under head camshaft mechanism. State its advantages.	**04**
2A.	Sketch and explain semi pressure lubrication.	**03**
2B.	Explain and with a neat sketch explain the working of vacuum Ignition advance.	**03**
2C.	With a neat sketch explain the working of an electrical fuel pump.	**04**
3A.	Draw and explain working of a epicyclic gear box	**03**
3B.	An automobile power unit gives a maximum torque of 13.56 Nm. The clutch is of a single plate dry disc type, having effective clutch lining of both sides of the plate disc. The coefficient of friction is 0.3 and the maximum axial pressure is 8.29×10^4 Pa, and external radius of the friction surface is 1.25 times the internal radius. Calculate the dimensions of the friction lining.	**03**
3C.	Draw and explain working of a single plate clutch	**04**
4A.	Draw and explain the working of a double acting telescopic shock absorber.	**03**
4B.	A motor car has a wheel base of 2.8 m and pivot center of 1.1 m. The front and rear wheel track is 1.20 m. Calculate the correct angle of outside lock and turning circle radius of the outer front and inner rear wheels when the angle of inside lock is 42 degrees.	**03**
4C.	With a neat sketch explain briefly working of rigid axle suspension steering system with respect movement of the all the linkages while taking left and right turn.	**04**
5A.	Compare the three quarter floating and full floating axle and draw the neat sketch.	**03**
5B.	Explain with a neat sketch working of swinging caliper	**03**
5C.	Explain the working of a servo vacuum brake system with a neat sketch	**04**