

SUBJECT CODE NO:- P-24
FACULTY OF ENGINEERING AND TECHNOLOGY
B.E.(MECH) Examination MAY/JUNE-2016
I.C. Engines
(Revised)

[Time:Three Hours]

[Max Marks:80]

“Please check whether you have got the right question paper.”

- N.B
- i) Solve any three questions from each section
 - ii) Support your answer with figure wherever possible.
 - iii) Figures to the right indicate full marks.
 - iv) Assume suitable data if necessary.

Section A

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|-----|---|----|
| Q.1 | a) Explain with neat diagram the working of 2-stroke petrol engine. | 07 |
| | b) Explain with P-V and T-S diagrams the diesel cycle. Obtain an equation for thermal efficiency of diesel cycle. | 07 |
| Q.2 | a) Explain by means of suitable graphs the effect of dissociation on maximum temperature and brake power. | 07 |
| | b) Explain 'Bosch type fuel pumps. | 06 |
| Q.3 | a) Describe the important qualities of CI Engine Fuels. | 06 |
| | b) What are different kinds of fuels used in an IC engine? Explain. | 07 |
| Q.4 | a) What is meant by abnormal combustion? Explain the phenomenon knock in SI-Engine. | 07 |
| | b) Differentiate between SI and CI engines. | 06 |
| Q.5 | a) Explain any two combustion chamber used in SI Engine. | 07 |
| | b) Explain the various factors that influence the flame speed. | 06 |

Section B

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| Q.6 | a) Explain combustion in CI engine with neat diagram. | 07 |
| | b) Write a note on knock in CI Engine. | 07 |
| Q.7 | a) Explain cylindrical and Toroidal combustion chambers used in CI-engine. | 07 |
| | b) Explain the affect of compression ratio and engine speed on delay period. | 06 |
| Q.8 | a) Explain 'Morse Test' for measuring friction power. | 06 |
| | b) The following details were noted in a test on a 4 cylinder, 4-stroke engine, diameter=100mm, stroke=120mm, speed=1400 rpm, fuel consumption=0.2kg/min c.v. of fuel=44000 KJ/Kg, difference in tension on either side of the pulley =40kg,brake circumference is 300 cm. If the mechanical efficiency is 80% calculate | 07 |
| | i) Brake thermal efficiency | |
| | ii) Indicated thermal efficiency | |
| | iii) Indicated mean effective pressure | |
| | iv) Brake specific fuel consumption. | |
| Q.9 | Write short notes on: | 13 |
| | a) Stratified Engine. | |
| | b) Wankal Engine. | |
| Q.10 | a) State different pollutant which SI engine emits. Explain the effects of HC and CO on human health. | 07 |
| | b) How 'NOx' are formed in I.C. Engines. Suggest methods to control the same. | 06 |