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M.E. / M.TECH. DEGREE EXAMINATIONS, MAY 2019

Second Semester

IC18204 – ENGINE AND COMPONENT TESTING*(Internal Combustion Engineering)***(Regulation 2018)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

1. State the necessity of engine testing.
2. What is Electrical test in test cell?
3. Name the device used for humidity measurement.
4. Write briefly about Oil consumption measurement during engine testing.
5. Does Engine test standards is required for engine testing? Justify.
6. Explain the durability test for IC engine.
7. Draw the emission cycles for tractors.
8. How particulate emissions are measured in Diesel engine?
9. Define gas exchange process.
10. Write briefly about swirl measurement in CI engine.

PART B - (5 X16 = 80 Marks)

11. (a) (i) Explain the Test cell requirements for Engine testing. (6)
(ii) With a neat sketch, design and explain the test cell for Diesel engine testing. (10)
(OR)
- (b) (i) Explain the Noise and vibration control in test cells for IC engines. (8)
(ii) Explain the air conditioning and exhaust system for engine testing in diesel engine. (8)
12. (a) With a neat sketch explain the types of dynamometers, Dynamometer panels, Engine controllers in Engine testing. (16)
(OR)
- (b) Explain briefly about Engine dynamometer coupling, Fuel consumption meter and Air fuel ratio measurement during engine testing. (16)

13. (a) (i) Explain European and Indian Engine test standards. (8)
(ii) Explain with a neat sketch the full throttle performance in SI and CI engine. (8)

(OR)

- (b) (i) Write briefly about Road load testing and ISO mapping used for Stationary engine testing. (8)
(ii) Differentiate between Automotive diesel engine testing and Stationary diesel engine testing. (8)

14. (a) (i) Explain the various types of Emission analysers used for IC engine. (8)
(ii) With a neat sketch explain the Emission cycles for diesel and petrol engines commercial vehicles. (8)

(OR)

- (b) (i) Explain steady state and transient cycles. (8)
(ii) With a neat sketch explain the CVS dilution tunnel used for Emission measurements. (8)

15. (a) (i) Explain the Fuel injection pressure measurement in IC engines. (8)
(ii) Explain the Combustion pressure measurement in IC engine. (8)

(OR)

- (b) Explain the advanced Camera used for spray and combustion visualization in IC engine. (16)