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B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Sixth Semester

AE16603 – AUTOMOTIVE POLLUTION AND CONTROL*(Automobile Engineering)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

		CO	RBT
1.	What is meant by greenhouse effect?	1	U
2.	What are the regulated and unregulated emissions from automobiles?	1	R
3.	How the unburnt hydrocarbons are formed in SI engines?	2	U
4.	When will CO emission be more, at rich or lean mixtures? Why?	2	U
5.	How the particulate emissions are formed in a diesel engine?	3	U
6.	What are the causes of black smoke from an automobile?	3	R
7.	Define EGR.	4	R
8.	What is meant by PCV system?	4	U
9.	Discuss the principle of dilution tunnels.	5	R
10.	Define driving cycle.	5	R

PART B - (5 X16 = 80 Marks)

11. (a) Discuss the formation of various pollution and its effect on human health, environment. **(16)** **1** **R**

(OR)

- (b) Explain the transient operational effect on pollution in IC engine. **(16)** **1** **U**

12. (a) Discuss the mechanism of HC and CO formation in SI engine. **(16)** **2** **R**

(OR)

- (b) Explain the mechanism of NO formation in S.I engine. Also explain the effect of combustion time and spark timing on this formation. **(16)** **2** **U**

13. (a) Explain in detail about the following in CI engine (i) Black Smoke (16) 3 U
(ii) White Smoke (iii) Blue Smoke (iv) Particulate Matter.

(OR)

- (b) Explain in detail about the combined effect of engine speed, cetane (16) 3 U
number and combustion time on nitric oxide formation in CI engine.

14. (a) What is meant by secondary injection? How it is carried out? How it (16) 4 R
is controlling the emission in diesel engine? Discuss in detail.

(OR)

- (b) Briefly explain the construction and working principle of 3- way (16) 4 U
catalytic converter.

15. (a) What is meant by NDIR? How it can be used to measure exhaust (16) 5 U
emission?

(OR)

- (b) Draw a schematic diagram of chemiluminescent analyzer and (16) 5 U
explain how it is used to measure emission from automobile engine.