Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

**End Semester Examination – Nov/Dec – 2017**

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| **Code :** | **16CE3002** | **Duration :** | **3hrs** |
| **Sub. Name :** | **ATMOSPHERIC ENVIRONMENTAL POLLUTION AND CONTROL** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | | **Marks** | |
| 1. | a. | Explain the basic theory of formation of photo-chemical smog, with the necessary reactions and examples. Mention the factors affecting the photo-chemical reactions. | | CO1 | | 10 |
| b. | State the importance of  i. Maximum mixing height ii. Wind direction and speed temperature  iii. Humidity iv. Solar radiation with respect to air pollution. | | CO1 | | 10 |
| (OR) | | | | | | |
| 2. |  | Briefly explain the effects of air pollution on:  i. Human health ii. Plants iii. Animals iv. Economical effects | | CO1 | | 20 |
| 3. | a. | Explain the legal provisions in India against the air pollution. | | CO2 | | 10 |
|  | b. | Define windrose. Explain the importance of windrose in air pollution studies with a neat sketch. | | CO1 | | 10 |
| (OR) | | | | | | |
| 4. | a. | Explain the plume behavior from a stack with respect to the different prevailing lapse rate. Use neat sketches. | | CO2 | | 10 |
|  | b. | Elaborate in detail about the role of adsorption principle in air pollution control and how can the gaseous pollutants be controlled using this method? | | CO2 | | 10 |
| 5. | a. | Describe the salient features of settling chambers with a neat diagram. | | CO3 | | 10 |
|  | b. | Write a short note on different modeling techniques of air pollution. | | CO2 | | 10 |
| (OR) | | | | | | |
| 6. |  | List out the various procedures for controlling the emissions of SOx. Explain how can you control the emission of SOx using i. Natural dispersion by dilution ii. Desulphurization iii. Alternate fuels | | CO3 | | 20 |
| 7. | a. | Mention the uses of carrying out assessment of pollutant using stack sampling.Explain in detail about the planning of the study, collection of representative sample and sampling system in stack sampling. | | CO2 | | 15 |
|  | b. | Discuss the factors that has to be considered while selecting suitable control equipment for particulate removal. | | CO3 | | 5 |
| (OR) | | | | | | |
| 8. |  | Summarize in detail about the various softwares available for air quality modeling with suitable case studies. | | CO3 | | 20 |
|  | | **Compulsory**: | |  | |  |
| 9. | a. | Paraphrase the working and classification of bag house filters based on the methods of cleaning and explain each in detail with a neat sketch. | | CO3 | | 10 |
|  | b. | Point out the objectivies of air quality monitoring and recollect the step that has to be followed for conducting air quality survey. | | CO2 | | 10 |

ALL THE BEST