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**End Semester Examination – Nov/Dec – 2018**

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| **Code :** | **12EI242** | **Duration :** | **3hrs** |
| **Sub. Name :** | **POWER PLANT INSTRUMENTATION** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | State the importance of instrumentation in power generation. | 1 |
| 2. | What is meant by cogeneration? | 1 |
| 3. | List the sensors for steam flow measurement. | 1 |
| 4. | Define power factor. | 1 |
| 5. | List any two commercially available dust monitors. | 1 |
| 6. | Mention the types of chromatography. | 1 |
| 7. | Give the two important controls in the boiler drum level control. | 1 |
| 8. | Give the reason for the fuel admission interlock. | 1 |
| 9. | State the importance of shell temperature monitoring. | 1 |
| 10. | What is the need for vibration analysis? | 1 |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Discuss the principle of a solar cell. | 3 |
| 12. | List the basic factors to be considered for feed water flow. | 3 |
| 13. | Write short notes on pH monitor. | 3 |
| 14. | Discuss the function of Engine management systems. | 3 |
| 15. | How to control the vibration of turbine blades? | 3 |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | With a neat sketch, explain in detail the operation of wind power plant. | 15 |
| (OR) | | | |
| 17. |  | Draw and explain the piping and instrumentation of a boiler system in a power plant. | 15 |
| 18. |  | Discuss the radiation measurement methods in power plants. | 15 |
| (OR) | | | |
| 19. |  | Discuss the steam pressure measurement with suitable sketch. | 15 |
| 20. |  | Describe a method to measure flue gas Oxygen analyzer with a neat sketch. | 15 |
| (OR) | | | |
| 21. |  | Elucidate the working principle of fuel analyzer with a neat sketch. | 15 |
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| 22. |  | Explain the furnace draft control system with suitable sketch. | 15 |
| (OR) | | | |
| 23. |  | Describe the distributed control systems in power plants. | 15 |
| 24. |  | Explain the method of shell temperature monitoring system in steam turbines. | 15 |
| (OR) | | | |
| 25. |  | Briefly discuss the speed control system with a block diagram. | 15 |