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

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

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| **Code :** | **17ME3028** | **Duration :** | **3hrs** |
| **Sub. Name :** | **DESIGN OF THERMAL POWER EQUIPMENT** | **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. | Discuss the parameters to be considered in boiler design. | CO1 | 10 |
| b. | Explain the type of refractory walls with sketches? | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Describe the different type of furnaces for solids and liquids? | CO2 | 10 |
| b. | What is furnace bottom? Explain the cold primary air system with a sketch? | CO2 | 10 |
|  |  |  |  |  |
| 3. | a. | What are the types of condenser? Explain with sketches. | CO5 | 10 |
| b. | Distinguish between the natural circulation and forced circulation of water in a boiler. What are the advantages of forced circulation type boiler? | CO2 | 10 |
| (OR) | | | | |
| 4. | a. | Explain the types of cooling tower with sketches? | CO5 | 10 |
| b. | What is vacuum efficiency? Discuss the problems due to air leakage into the condenser? | CO5 | 10 |
|  |  |  |  |  |
| 5. | a. | What are the types of economizer? Explain with sketches. | CO3 | 10 |
| b. | Discuss the procedure for design of a desuperheater? | CO3 | 10 |
| (OR) | | | | |
| 6. | a. | Describe the methods of finding heat losses in a boiler? | CO2 | 10 |
| b. | How will you conduct a boiler trail? Explain. | CO2 | 10 |
|  |  |  |  |  |
| 7. | a. | Summarize the boiler feed water treatment methods? Explain any one type of feed water treatment method with a sketch? | CO6 | 10 |
| b. | What are boiler drum internals? Explain. | CO6 | 10 |
| (OR) | | | | |
| 8. | a. | Describe briefly about the mechanical carry over in water and steam purification? | CO6 | 10 |
| b. | What are the advantages and disadvantages of chemical treatment of boiler feed water? | CO6 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Explain the types of draft system in a boiler with sketches? | CO4 | 10 |
| b. | List the types of air heater? Explain any one type with a sketch? | CO3 | 10 |