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Question Paper Code: 39603

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2018

Elective

Instrumentation and Control Engineering

01UIC903 - POWER PLANT INSTRUMENTATION

(Regulation 2013)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Write two examples of cogeneration.
2. What are the factors to be considered to improve the performance power plant?
3. Why drum level measurement is very important? How is it taken care of?
4. List the non electrical parameters power plant.
5. List any four effects caused due to the presence of impurities in feed water.
6. Give the importance of dissolved oxygen analyzer in power plant.
7. Draw the P&I diagram of air fuel ratio control?
8. Mention the importance of interlocks in boilers.
9. What are the factors to be considered for choosing vibration sensors?
10. Mention the various cooling methods for turbo generator.

PART - B (5 x 16 = 80 Marks)

11. (a) Draw the general layout of a typical thermal power plant and explain various units required for the generation of power. (16)

Or

- (b) Explain in detail about Nuclear power plant with necessary diagram. (16)

12. (a) List the different measurement techniques used for measurement of steam flow and explain any one technique with a neat diagram. (16)

Or

- (b) With a neat sketch explain in detail about smoke density measurement. (16)

13. (a) Explain with a neat diagram the construction, operation and applications of infrared flue gas analyzer. (16)

Or

- (b) Describe in detail about the flue gas oxygen analyzer. (16)

14. (a) With a block diagram, describe the function of a distributed control system of a power plant. (16)

Or

- (b) Explain in detail about super heated steam temperature control system. (16)

15. (a) Explain in detail about the measurement of speed and vibration in turbine monitoring. (16)

Or

- (b) Briefly explain in detail about the lubricant oil temperature control. (16)