

Code: 9A03710

B.Tech IV Year I Semester (R09) Supplementary Examinations June 2017

**POWER PLANT ENGINEERING**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) What are the various stages involved in handling of coal? Explain.  
(b) With the help of neat sketch, explain working of bucket elevator in coal handling system.
- 2 (a) Compare over feed stoker with underfeed stoker.  
(b) With the help of neat sketch, explain working of retort stokers.
- 3 (a) With the help of neat sketch, explain any one type of air starting equipment.  
(b) With the help of neat sketch, explain dry sump lubricating system.
- 4 (a) With the help of line diagram, explain the layout of gas turbine plant with auxiliaries.  
(b) With the help of neat sketch, explain working of closed cycle gas turbine with inter cooler and reheating.
- 5 (a) Write a short note on: (i) Storage. (ii) Pondage. (iii) Flow measurements devices.  
(b) Explain briefly about pumped storage plants.
- 6 (a) Write the difference between HAWT and VAWT.  
(b) With the help of neat sketch, explain working of PEM fuel cell.
- 7 (a) Explain in detail about types of nuclear waste and their disposal.  
(b) With the help of neat sketch, explain the construction and working of a sodium-graphite reactor.
- 8 (a) A power station has to supply load as follows:

Time (hour)	0-6	6-12	12-14	14-18	18-24
Load (MW)	45	135	90	150	75

  - (i) Draw the load curve.
  - (ii) Draw load duration curve.
  - (iii) Calculate the load factor and plant capacity factor.  
(b) What are the methods to control environmental pollution? Explain.

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