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S.E. (Electrical) (First Sem.) EXAMINATION, 2010

POWER PLANT ENGINEERING

(2003 COURSE)

Time : Three Hours

Maximum Marks : 100

- N.B. :— (i) Answer *three* questions from each Section.  
(ii) Use separate answer-book for each Section.

SECTION I

UNIT I

1. (a) With a neat sketch, explain Bomb calorimeter. [8]  
(b) Write a short note on Boy's gas calorimeter. [8]

Or

2. (a) With the help of P-V and T-S diagram, explain Rankine cycle. [8]  
(b) Explain :  
(i) Reheat cycle  
(ii) Regenerative cycle. [8]

UNIT II

3. (a) Classify steam boilers with suitable examples. [5]  
(b) Classify steam condensers and compare surface condenser with jet condenser. [5]  
(c) Write a short note on cooling towers. [6]

P.T.O.

Or

4. (a) With neat sketch, explain construction and working of pelton wheel. [6]
- (b) Classify water turbines and compare Francis turbine with Kaplan turbine. [8]

### UNIT III

5. (a) Write a short note on Pump Storage Plant. [6]
- (b) Classify Hydroelectric power plants. [6]
- (c) Explain the working of thermal power plant. [6]

Or

6. (a) The table below shows the run-off data of a river at a particular site :

Month	Mean Discharge (millions of cu.m/second)
January	40
February	35
March	30
April	05
May	15
June	16
July	90

August	110
September	120
October	70
November	50
December	40

- (i) Draw the hydrograph and calculate the mean flow. [10]
- (ii) Draw the flow duration curve. [10]
- (b) Discuss the advantages and disadvantages of hydroelectric power plant. [8]

## SECTION II

### UNIT IV

7. (a) State the applications of diesel electric power plants. [6]
- (b) State the advantages and disadvantages of diesel electric power plants. [6]
- (c) Draw the layout of diesel engine power plant showing flow path of various streams. [6]

Or

8. (a) Compare gas turbine power plant with steam power plant. [6]
- (b) Explain open and closed cycle gas turbine power plant. [6]
- (c) Write a short note on Development of gas turbine power plants in India. [6]



## UNIT V

9. (a) Write a short note on Site selection for nuclear power plant. [6]
- (b) Classify nuclear reactors and explain : [10]
- (i) PWR
- (ii) BWR.

Or

10. (a) Write a short note on Gas cooled reactor. [6]
- (b) Write short notes on : [10]
- (i) Nuclear waste disposal
- (ii) Nuclear materials.

## UNIT VI

11. (a) Explain concentrating collectors. [6]
- (b) Explain : [10]
- (i) Wind mills
- (ii) Tidal power.

Or

12. (a) Explain Renewal Energy Development Program of India. [6]
- (b) Write a short note MHD generator. [6]
- (c) With neat sketch explain fuel cells. [4]