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Volume-4

Power Systems
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MCQ

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DIRECTOR'S *Message*

To reach heights one must start climbing and if the journey is difficult then perseverance is the key to success. As a teacher we have realized over past years that success in any competitive exam requires hard work and proper guidance. **Engineers Academy** with its unique teaching methodologies has always proved that we meet the expectations of thousands of students and parents to make their dreams come true. With changing patterns, we have adapted ourselves to deliver the best and ensure better results.

This book has been organized and executed with a lot of care, dedication and passion for lucidity. A conscious attempt has been made to simplify the concepts to facilitate better understanding of the subject.

Engineers Academy has many successful stories of students who secured All India Rank in ESE, GATE, PSUs and JEn. Now we invite you to become a part of Engineers Academy to explore and achieve ultimate goal of your life. We promise to provide you quality guidance with competitive environment which is far advanced and ahead than the reach of other institution.

We would feel satisfied if the book meets the needs of the students for whom it is meant.

Lastly, we are thankful to all the engineers, authors whose work has been the source of enlightenment, inspiration and guidance in presenting this book.

It is hoped that the book in its new form will enjoy its ever increasing popularity.

Regards

Dr. Pankaj Goyal

Preface

This book has been written to meet the growing requirements of candidates appearing for BSNL, DRDO, ISRO, BARC, ECIL, TTA, RRB-JE, State and Public Sector Engineering Examinations. Though every candidate has ability to succeed but competitive environment, in-depth knowledge, quality guidance, time management and good source of study is required to achieve goals.

This book includes Multiple Choice Questions (MCQ) which works as a mock exam practice for the reader. Questions of all the subject have been organized in systematic, concepts oriented and error less manner so that it become easy and interesting for even a beginner to understand. It is a very convenient book and must be solved by candidate aiming for competitive exams.

After solving this booklet students can feel encouraged and develop confidence to attempt each and every type of numerical as well as theoretical problems. Each problems explains solving approach so that at the end, so the reader is well equipped to be able to apply any type of problem solving requirement and distinctly choose one strategy or type from the other.

We hope this book will be proved an important tool to succeed in BSNL, DRDO, ISRO, BARC, ECIL, TTA, RRB-JE, State and Public Sector Engineering Examinations.

It is earnestly hoped that with the extensive additions and revisions, the present edition will facilitate the students not only in preparing themselves for competitive examinations but also in preparing for their regular examinations and prove more useful to the students than the earlier editions.

Even though, enough readings were given for correcting the error and printing mistakes, due to human tendency there could be some minor types in the book. If any such types found, they will be highly appreciated and in corporated in the next edition. Also, please provide your valuable suggestions at : engineers.academy.india@gmail.com

Wish you all the best. Have a nice reading.

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CONTENTS

UNIT-I

POWER SYSTEM

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CHAPTER 1

GENERATION OF ELECTRICAL POWER & ECONOMIC CONSIDERATION

OBJECTIVE QUESTIONS

1. The secondary sources of energy are

(a) Solar, wind and water

(b) Coal, oil and uranium

(c) Either (a) or (b)

(d) Neither (a) or (b)

2. The draught which a chimney produces is called

(a) Induced draught (b) Natural draught

(c) Forced draught (d) Balanced draught

3. The draught in locomotive boilers is produced by

(a) Forced fan

(b) Chimney

(c) Steam jet

(d) Only motion of locomotive

4. Caking coals are those which

(a) Burn completely

(b) Burn freely

(c) Do not form ash

(d) Form lumps or masses of coke

5. Blowing down of boiler water is the process

(a) To reduce the boiler pressure

(b) To increase the steam temperature

(c) To control the solid concentration in the boiler water by removing some of the concentrated saline water

(d) None of the above

6. The blades of the gas turbine rotor are made of

(a) Carbon steel

(b) Stainless steel

(c) High alloy steel

(d) High nickel alloy (Nimic 80)

7. Fission chain reaction is possible when

(a) Fission produces the same number of neutrons which are absorbed

(b) Fission produces more neutrons than are absorbed

(c) Fission produces less neutrons than are absorbed

(d) None of the above

8. A consumer has to pay lesser fixed charges in

(a) Flat rate tariff

(b) Two part tariff

(c) Maximum demand tariff

(d) None of the above

9. In Hopkinson demand rate or two part tariff the demand rate or fixed charges are

(a) Dependent upon the energy consumed

(b) Dependent upon the maximum demand of the consumer

(c) Both (a) and (b)

(d) None of the above

10. In a load-duration curve for an integrated power system the uppermost crest represents the energy contributed by

(a) Base power station

(b) Major thermal station

(c) Peaking hydro or gas turbine stations

(d) Non-conventional power stations

11. The voltage of a single solar cell is

(a) 0.2 V (b) 0.5 V

(c) 1.0 V (d) 2.0 V

12. Load curve is useful in deciding the

(a) Operating schedule of generating units

(b) Sizes of generating units

(c) Total installed capacity of the plant

(d) All of the above

13. Annual operating expenditure of a power plant consists of

(a) Fixed charges

(b) Semi-fixed charges

(c) Running charges

(d) All of the above

14. Direct conversion of heat into electric power is possible through

(a) Fuel cell

(b) Batteries

(c) Thermionic converter

(d) All of the above

15. A pilot exciter is provided on generators for which of the following reasons?

(a) To excite the poles of main exciter

(b) To provide requisite starting torque to main exciter

(c) To provide requisite starting torque to generator

(d) None of the above

16. The maximum demand of a consumer is 2 kW and his daily energy consumption is 20 units. His load factor is

(a) 10% (b) 41.6%

(c) 50% (d) None of the above

17. The economizer, a component of steam power plants, is a heat-exchanger utilising the waste heat of

(a) Bleed-steam to heat the feed water

(b) Flue-gas to heat the feed water

(c) Flue-gas to heat the air going into the boiler

(d) Flue-gas to heat the pulverised coal

18. Match List-I (Power plant) with List-II (Application) and select the correct answer using the codes given below

	List-I		**List-II**
A.	Nuclear	**1.**	Base load
B.	Diesel	**2.**	Stand by
C.	Gas turbine	**3.**	Base load or peak load
D.	Hydro	**4.**	Peak load

Codes:	**A**	**B**	**C**	**D**
(a)	1	3	4	2
(b)	4	2	1	3
(c)	4	3	1	2
(d)	1	2	4	3

19. Match List-I (Pressure head) with List-II (Type of turbine) and select the correct answer using the codes given below the lists

	List-I		**List-II**
A.	Low head	**1.**	Kaplan
B.	Medium head	**2.**	Francis
C.	High head	**3.**	Pelton

Codes:	**A**	**B**	**C**
(a)	1	2	3
(b)	3	2	1
(c)	2	3	1
(d)	2	1	3

20. The instantaneous power taken by a balanced three-phase load supplied from a balanced three phase source is

(a) Zero

(b) A constant value

(c) A pulsating function with a non-zero average

(d) Alternating with a zero average

21. To increase power transfer capability of a long transmission line, we should

(a) Increase line resistance

(b) Increase transmission voltage

(c) Decrease line reactance

(d) Both (b) & (c)

[DMRC JE - 2016]

22. The moderator is used in nuclear power plant to

(a) prevent the reactor from harmful radiation

(b) increase the speed of neutron

(c) decrease the speed of neutron

(d) coolent

[LMRC JE - 2015]

23. Lignite, bituminous and anthracite are different ranks of

(a) Nuclear fuel (b) Coal

(c) Biogas (d) Natural gas

[TNPSC AE - 2018]

24. In a nuclear reactor, heavy water can be ideally used as

(a) Biological shield (b) Moderator

(c) Control rods (d) All of the above

25. Value of Power factor lies in between

(a) 0 and 1 (b) 0 and 10

(c) 10 and 100 (d) 10 and 1000

26. Which of the following is a device capable of supplying electrical energy?

(a) Microwave (b) Radio transmitter

(c) Solar cell (d) None of these

27. Large turbo-generators are usually driven by _____.

(a) Coal turbine (b) Steam turbine

(c) Diesel turbine (d) Water turbine

[UPPCL JE - 2014]

28. What is the maximum possible output of a solar array?

(a) 500 W/m^2 (b) 250 W/m^2

(c) 500 kW/m^2 (d) 250 mW/m^2

[DSSSB JE - 2014]

29. If maximum load of generating station and the rated plant capacity are equal then

(a) Load factor is 1

(b) Capacity factor is 1

(c) Load factor and capacity factor are equal

(d) Utilization factor is poor.

[UPPCL JE - 2014]

30. Which of the following expressions depicts the Utilization Factor?

(a) Ratio of maximum generator demand to the generator capacity.

(b) Ratio of actual energy produced to the generator capacity.

(c) Ratio of generator capacity to maximum generation demand.

(d) Ratio of generator capacity to actual energy produced.

[UPPCL JE - 2014]

31. In a star connected balanced circuit the phase difference between the line voltage V_{RY} and the phase voltage V_{RN} is equal to

(a) $30° - \phi$ (b) $60°$

(c) $120°$ (d) $30°$

[NMRC JE - 2017]

32. The following generating station has the minimum running cost

(a) Diesel power station

(b) Nuclear power station

(c) Hydroelectric power station

(d) Thermal power station

[NMRC JE - 2017]

33. The normal phase sequence of a 3 phase AC supply is

(a) RBY (b) RYB

(c) BRY (d) YBR

[NMRC JE - 2017]

34. The ratio of average load to the maximum demand during a given period is _____.

(a) Demand factor (b) Diversity factor

(c) Load factor (d) Connected load

[NMRC JE - 2017]

35. In a nuclear power station, moderator is used to

(a) Accelerate the speed of neutrons

(b) Stop the chain reaction

(c) Absorb neutrons

(d) Reduce the speed of neutrons

[NMRC JE - 2017]

36. To a star connected 3 phase system, relationship between line voltage and phase voltage is given by

(a) $V_L = V_{ph}$ (b) $V_L = 3V_{Ph}$

(c) $V_L = \sqrt{3}\, V_{Ph}$ (d) $V_L = \sqrt{2}\, V_{Ph}$

[NMRC JE - 2017]

37. Induced draft fans are located at

(a) The top

(b) The bottom

(c) In the middle part

(d) Can be anywhere, in the cooling tower

38. The disadvantages of renewable source of energy is /are

(a) Intermittency

(b) Lack of dependability

(c) Availability in low energy densities

(d) All the above

39. Which of the following is usually not the generating voltage

(a) 6.6 kV (b) 11 kV

(c) 12.5 kV (d) 13.2 kV

40. Large size steam power plants and nuclear plants are suitable for

(a) Base loads

(b) Intermediate loads

(c) Peak loads

(d) Both base and peak loads

[TNPSC AE - 2018]

41. Which plant can be never have 100% load factor

(a) Nuclear power plant

(b) Peak load plant

(c) Hydro electric power plant

(d) Base load plant

42. More heat loss in a steam power station occurs in

(a) Boiler (b) Super heater

(c) Economiser (d) Condenser

43. A commercial and an ideal regulated power supply should have

(a) 100%, 50% regulation

(b) 1%, 0% regulation

(c) 100%, 0% regulation

(d) 100%, 100% regulation

44. Which of the following connections of a three phase transformer are best suited for 3-phase, 4-wire service ?

(a) $\Delta - \Delta$ (b) Y – Y

(c) Δ – Y (d) Y – Δ

[UPPCL JE - 2007]

45. Kaplan turbines are used whenever the water head is

(a) low (b) high

(c) medium (d) both (b) and (c)

[UPPCL JE - 2007, 2018]

46. Economisers are used to heat

(a) Coal (b) Air

(c) Steam (d) Feed water

[UPPCL JE - 2007]

47. In thermal power plants, the pressure of working fluid cycle is developed by

(a) Condenser (b) Superheater

(c) Feed water pump (d) Turbine

[UPPCL JE - 2007]

48. A gas turbine power plant is best suited for

(a) Base load

(b) Peak load

(c) Emergency purpose

(d) None of the above

[UPPCL JE - 2007]

49. Out of the following plant categories

(i) Nuclear (ii) Run-off river

(iii) Pump storage (iv) Diesel

The base load power plants are

(a) (i) and (ii) (b) (ii) and (iii)

(c) (i), (ii) and (iii) (d) (i), (iii) and (iv)

[UPPCL JE - 2007]

50. Which of the following components is not a part of hydro-electric plant ?

(a) Penstock (b) Spillway

(c) Surge tank (d) Economiser

[UPPCL JE - 2007]

51. The pH value of water used for boiler of thermal power plant is

(a) Unity

(b) 7

(c) Slightly more than 7

(d) 10

[Uttarakhand JE - 2013, UPPCL JE - 2007]

52. The expression for power plant output in kilo-watt of a hydro-electric plant is given by

(a) $\frac{0.736\ Q.W.h}{75\times\eta_o}$ (b) $\frac{0.736\ Q.Wh\cdot\eta_0}{75}$

(c) $\frac{75Q\cdot Wh\cdot\eta_0}{0.736}$ (d) None of these

[Uttarakhand JE - 2013, UPPCL JE - 2007]

53. The first nuclear power plant was built in India at which place ?

(a) Tarapur (b) Rana Pratap Sagar

(c) Kalpakkam (d) Narora

[UPPCL JE - 2007]

54. Which alternator will have more number of poles?

(a) Coupled to steam turbine

(b) Coupled to gas turbine

(c) Coupled to hydraulic turbine

(d) None of the above

[Uttarakhand JE - 2013, UPPCL JE - 2007]

55. The connected load of a consumer is 2 kW and his maximum demand is 1.5 kW. The demand factor of the consumer is

(a) 0.375 (b) 0.75

(c) 1.33 (d) None of these

[UPPCL JE - 2007]

56. Which of the following is not a part of Steam Power Plant?

(a) Switch Yard (b) Ash precipitators

(c) Draught fan (d) Surge Chamber

[UPPCL JE - 2016]

57. Pollution due to Tidal Energy generation is usually

(a) Zero (b) Low

(c) Moderate (d) High

[UPPCL JE - 2016]

58. In a bio-gas plant, dome/gas collector is usually _____ in shape.

(a) Conical (b) Hemispherical

(c) Cuboidal (d) Pyramidal

[UPPCL JE - 2016]

59. Capital cost on a nuclear plant is

(a) Very low (b) Low

(c) Moderate (d) Very high

[UPPCL JE - 2016]

60. ____ has the maximum life tenure.

(a) Wooden Poles

(b) Steel Poles

(c) Concrete Poles

(d) Steel Towers

[UPPCL JE - 2016]

61. Power generation of a thermal power plant is based on

(a) Rankine Cycle (b) Otto Cycle

(c) Diesel Cycle (d) Carnot Cycle

[UPPCL JE - 2016]

62. In a steam power plant, _____ heats the feed water on its way to the boiler by deriving heat from the flue gases.

(a) Superheater (b) Economizer

(c) Preheater (d) Turbine

[UPPCL JE - 2016, 18]

63. Working fluid in a gas turbine plant is generally compressed in _____, _____ compressor.

(a) Reciprocating, single stage

(b) Reciprocating, multi stage

(c) Rotary, single stage

(d) Rotary, multi stage

[UPPCL JE - 2016]

64. High Head Power Plant has _____ turbine as common prime mover.

(a) Francis

(b) Pelton Wheel

(c) Kaplan

(d) Kaplan/ Pelton Wheel

[UPPCL JE - 2016]

65. Solar Energy cannot be used in which of the following processes?

(a) Energy production

(b) Nuclear reactions

(c) Purification of water

(d) Cooking of food

[UPPCL JE - 2016]

66. Installed capacity of Micro Hydel power plants is about

(a) 100 kW (b) 2000 kW

(c) 6000 kW (d) 15000 kW

[UPPCL JE - 2016]

67. Which type of Hydel Power Plants can be used as both base and peak load plants?

(a) Run-of-river plants with pondage

(b) Run-of-river plants without pondage

(c) Storage type plants

(d) Pumped storage plants

[UPPCL JE - 2016]

68. In context to solar energy production, the efficiency of flat plate collectors is usually

(a) 20-30% (b) 30-50%

(c) 50-70% (d) 70-90%

[UPPCL JE - 2016]

69. In practice, Earth is chosen as a place of zero electric potential because it

(a) Is non-conducting

(b) Is easily available reference

(c) Keeps losing and gaining electric charge every day

(d) Has almost constant potential

[UPPCL AE - 2016]

70. The power output from a hydro-electric power plant depends on

(a) Head, type of dam and discharge

(b) Type of dam, discharge and type of catchment area

(c) Type of draft tube, type of turbine and efficiency of the system

(d) Head, discharge and efficiency of the system

[UPPCL AE - 2016]

71. Core is insulated by _____ in a Shielded cable.

(a) Impregnated paper (b) VIR

(c) PVC/PE (d) Gutta Percha

[UPPCL AE - 2016]

72. The term "penstock" is associated with which type of power plant?

(a) Hydel (b) Nuclear

(c) Solar (d) Thermal

[UPPCL AE - 2016]

73. Which of the following will happen if the thickness of refractory wall of furnace is increased?

(a) Energy consumption will decrease

(b) Temperature inside the furnace will fall

(c) Temperature on the outer surface of furnace walls will drop

(d) Heat loss through furnace wall will increase

[UPPCL JE - 2018]

74. The capacity factor of a plant is equal to

(a) Maximum load/average load

(b) Average load/maximum load

(c) Maximum load/plant capacity

(d) Average load/plant capacity

[TNPSC AE - 2018]

75. Why regenerator use in gas turbine power plant?

(a) To produce extra heat

(b) To produce high pressure in chamber

(c) To produce high temperature

(d) To recover heat from exhaust gases

[UPPCL JE - 2018]

76. Which principle type of turbines is used in hydroelectric power station?

(a) Impulse type

(b) Reaction type

(c) Both Impulse type and Reaction type

(d) None of these

[UPPCL JE - 2018]

77. Usually, diesel power station is used where demand of power is _____.

(a) Very high (b) High

(c) Less (d) None of these

[UPPCL JE - 2018]

78. Which of the following is not a part of a modern wind turbine?

(a) Compressor (b) Gearbox

(c) Nacelle (d) Yaw drive

[TNPSC AE - 2018]

79. Which type of power stations use potential energy of water to produce electrical energy?

(a) Diesel power station

(b) Nuclear power station

(c) Hydroelectric power station

(d) Steam power station

[UPPCL JE - 2018]

80. Which type of power station can be located at any place?

(a) Diesel power station

(b) Nuclear power station

(c) Hydroelectric power station

(d) Steam power station

[UPPCL JE - 2018]

81. Which type of generating system converts heat energy of coal into electrical energy?

(a) Diesel power station

(b) Nuclear power station

(c) Hydroelectric power station

(d) Steam power station

[UPPCL JE - 2018]

82. What is the capacity of India's biggest thermal power plant?

(a) 5560 MW (b) 5340 MW

(c) 4760 MW (d) 4620 MW

[UPPCL JE - 2018]

83. What is the efficiency of diesel power station?

(a) 53-56% (b) 22-27%

(c) 85-90% (d) 35-42%

[UPPCL JE - 2018]

84. What is used as a prime mover in gas power plant?

(a) Gas turbine (b) Diesel

(c) Water (d) Pelton turbine

[UPPCL JE - 2018]

85. Why surge tanks are used in hydroelectric power system?

(a) For the protection of turbines

(b) For the protection of penstock

(c) For the protection of spillways

(d) None of the above

[UPPCL JE - 2018]

86. _____ is used for non conventional system to generate electrical energy.

(a) Diesel electrical system

(b) Nuclear system

(c) Tidal energy

(d) Thermal system

[UPPCL JE - 2018]

87. Choose the correct schematic arrangement of nuclear power station.

(a) Nuclear reactor, heat exchanger, steam turbine, alternator

(b) Steam turbine, alternator, heat exchanger, nuclear reactor

(c) Steam turbine, heat exchanger, alternator, nuclear reactor

(d) Alternator, heat exchanger, nuclear reactor, steam turbine

[UPPCL JE - 2018]

88. Which of the following part or auxiliary is not used in diesel power station?

(a) Lubricating system

(b) Fuel supply system

(c) Steam generating system

(d) Intake air system

[UPPCL JE - 2018]

89. Which of the following radio-active byproducts releases from nuclear reaction?

(a) Strontium (b) Cesium

(c) Tritium (d) All of these

[UPPCL JE - 2018]

90. Binary vapour cycles are used to _____.

(a) Increase efficiency of the turbine

(b) Increase the efficiency of the plant

(c) Increase the performance of the condenser

(d) Balance the efficiency of turbine

[UPPCL JE - 2018]

91. The amount of energy available in the wind at any instant is proportional to _____ of the wind speed.

(a) Square root (b) Square

(c) Half (d) Qube

[TNPSC AE - 2018]

92. Pugga valley in Ladakh is suitable for which of the following power generation?

(a) Wind (b) Solar

(c) Geo thermal (d) All of these

[UPPCL JE - 2018]

93. NASA standard value for solar constant

(a) 1353 Watts/sq.m

(b) 116.5 Watts/sq.m

(c) 13.53 kw/sq.m

(d) 0.116 kw/sq.m

[DSSSB JE - 2014]

94. A man receives an electricity bill where his monthly consumption was given as 123 units. This commercial units is basically

(a) kWh (b) kW

(c) Watt per hour (d) Watt per second

[UPPCL – 2016]

95. Which of these sources leave a larger carbon footprint?

(a) Hydro (b) Solar

(c) Thermal (d) Hydrogen

[AAI - 2016]

96. Combined cycle power plants may need

(a) MHD generator

(b) Thermionic converter

(c) Thermoelectric generator

(d) All of these

[Uttarkhand JE 2013]

97. _____ are employed for the operation of Jaw Crushers

(a) DC shunt wound motor

(b) Squirrel cage induction motor

(c) Belted slip ring induction motor

(d) Any DC motor

[UPPCL JE - 2016]

98. For a consumer, the most economical power factor is generally

(a) 0.5 lagging (b) 0.95 lagging

(c) 0.4 leading (d) 0.75 leading

[URPVUNL - 2015]

99. In Flat Demand Rate, the bill depends on ;

1. Maximum Demand
2. Amount of Energy Consumed

Which of the following is/are correct?

(a) Neither 1 or 2 (b) Only 1

(c) Both 1 and 2 (d) Only 2

[UPPCL – 2016]

100. Power from

(a) Thermal plants are preferred for normal periods and Hydro plants are preferred for peak power periods

(b) Thermal plants are preferred for peak periods and Hydro plants are preferred for normal periods

(c) Thermal and hydro have no utility during peak periods

(d) Both thermal and hydro are preferred for normal periods

[UPRVUNL JE - 2016]

101. Which one of the following is a boiler fitting?

(a) Steam separator (b) Blow-off cock

(c) Economizer (d) Super heater

[Jharkhand JE - 2017]

102. Which plant has high depreciation charges ?

(a) Wind power plant

(b) Thermal plant

(c) Hydroelectric plant

(d) Diesel plant

[UPRVUNL - 2015, JUVNL JE - 2017]

103. The function of economiser in thermal power plant is to

(a) Extract heat from flue gases and uses it for heating feed water to boiler

(b) Condense the steam exhausted from turbine

(c) Remove carbon particles from flue gases

(d) Increase temperature of steam coming from boiler before admitting to turbine

[LMRC JE - 2016]

104. In a thermal power plant of moderate size, electrical power generated, at voltage

(a) 110 kV (b) 230 V

(c) 440 V (d) 11 kV

[UJVNL - 2016]

105. Which of the following is considered as superior quality of coal

(a) Peat (b) Coke

(c) Bituminous coal (d) Lignite

[UJVNL - 2016]

106. In coal-fired thermal power stations, what are the electrostatic precipitators used for?

(a) To remove dust particles setting on the bus bar conductors in the station yard

(b) To condense steam by electrostatic means

(c) To keep the air heaters clean

(d) To collect the dust particles from the flue gases

[FCI - 2015]

107. Which one of the following is used to measure temperature inside a boiler furnace?

(a) Resistance thermometer

(b) Bimetallic thermocouple

(c) Optical pyrometer

(d) Thermistor

[BSNL TTA JE - 2013]

108. Which of the following in a thermal power plant, is not a fixed cost?

(a) Fuel cost (b) Interest on capital

(c) Depreciation (d) Insurance charges

[UPRVUNL - 2015]

109. The highest rating transformer is likely to found application in

(a) Distribution (b) Transmission

(c) Generation (d) Sub station

[JE Trainee - 2013]

110. For domestic installation the load of house is considered in which category

(a) Inductive only

(b) Resistive and inductive

(c) Resistive only

(d) Resistive and capacitive

[JE Trainee - 2013]

111. The overall efficiency of a thermal power plant is equal to

(a) Rankine cycle efficiency

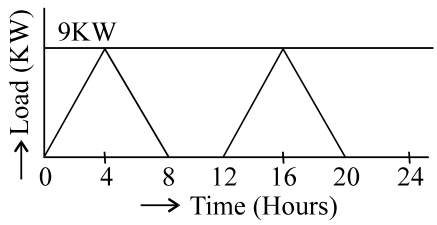
(b) Carnot cycle efficiency

(c) Regenerative cycle efficiency

(d) Boiler efficiency × Turbine efficiency × Generator efficiency

[LMRC - 2015]

112. The load curve of an electic installation is shown in figure



Daily energy consumption is

(a) 36 kwh (b) 72 kwh

(c) Zero (d) 108 kwh

[JE Trainee - 2013]

113. Compounding of steam is done for

(a) reducing the work done

(b) increasing the rotor speed

(c) reducing the rotor speed

(d) balancing the turbine

[LMRC - 2015]

114. Major share of power generated in India is through

(a) Thermal Power Plants

(b) Nuclear Power Plants

(c) Hydro-electric Power Plants

(d) Solar energy

[Uttarkhand JE - 2013]

115. The advantage of using pulverized fuel is

(a) Higher boiler efficiency

(b) Easy and complete combustion

(c) Low air requirement

(d) All of the above

[Uttarkhand JE - 2013]

116. In a thermal power plant, feed water heaters, super heaters and air preheaters are mainly used to

(a) Have a better dust removal in the plant

(b) Have a better ash removal in the plant

(c) Increase the efficiency of the plant

(d) None of the above

[UPSSSC - 2015]

117. Through which source is maximum electricity generated in the world?

(a) Water (b) Nuclear power

(c) Coal (d) Solar power

[UPSSSC - 2015]

ANSWERS SHEET

1. *Ans. (a)*
2. *Ans. (b)*
3. *Ans. (c)*
4. *Ans. (d)*
5. *Ans. (c)*
6. *Ans. (d)*
7. *Ans. (b)*
8. *Ans. (c)*
9. *Ans. (b)*
10. *Ans. (c)*
11. *Ans. (b)*
12. *Ans. (d)*
13. *Ans. (d)*
14. *Ans. (c)*
15. *Ans. (a)*
16. *Ans. (b)*

$$\text{Load Factor} = \frac{\text{Average Load}}{\text{Peak Load}} \times 100$$

$$= \frac{20}{2 \times 24} \times 100 = 41.6\%$$

17. *Ans. (b)*
18. *Ans. (d)*
19. *Ans. (a)*
20. *Ans. (b)*
21. *Ans. (d)*
22. *Ans. (c)*
23. *Ans. (b)*
24. *Ans. (b)*
25. *Ans. (a)*
26. *Ans. (c)*
27. *Ans. (b)*
28. *Ans. (b)*
29. *Ans. (c)*
30. *Ans. (a)*
31. *Ans. (d)*
32. *Ans. (c)*
33. *Ans. (b)*
34. *Ans. (c)*
35. *Ans. (d)*
36. *Ans. (c)*
37. *Ans. (a)*
38. *Ans. (d)*
39. *Ans. (c)*
40. *Ans. (a)*
41. *Ans. (b)*
42. *Ans. (d)*
43. *Ans. (b)*
44. *Ans. (c)*
45. *Ans. (a)*
46. *Ans. (d)*
47. *Ans. (c)*
48. *Ans. (b)*
49. *Ans. (a)*
50. *Ans. (d)*
51. *Ans. (c)*
52. *Ans. (b)*
53. *Ans. (a)*
54. *Ans. (c)*
55. *Ans. (b)*

$$\text{Demand Factor} = \frac{\text{Maximum Demand}}{\text{Connected Load}}$$

$$= \frac{1.5}{2} = 0.75$$

56. *Ans. (d)*
57. *Ans. (a)*
58. *Ans. (b)*

59. ***Ans. (d)***

60. ***Ans. (d)***

61. ***Ans. (a)***

62. ***Ans. (b)***

63. ***Ans. (d)***

64. ***Ans. (b)***

65. ***Ans. (b)***

66. ***Ans. (a)***

67. ***Ans. (c)***

68. ***Ans. (b)***

69. ***Ans. (d)***

70. ***Ans. (d)***

Potential energy of large quantity of stored water is used by hydro electric power plant to generate electrical energy. Head of water is important to get kinetic energy from that potential energy. Efficiency of alternator represents that what percentage of input mechanical power it can convert into electrical power.

71. ***Ans. (c)***

72. ***Ans. (a)***

Penstocks are pipes or long channels that carry water down from the hydroelectric reservoir to the turbines inside the actual power stations.

73. ***Ans. (c)***

74. ***Ans. (d)***

75. ***Ans. (d)***

76. ***Ans. (c)***

77. ***Ans. (c)***

78. ***Ans. (a)***

79. ***Ans. (c)***

80. ***Ans. (a)***

81. ***Ans. (d)***

82. ***Ans. (c)***

Vindhyachal TPP in Singrauli (M.P.) owned by NTPC.

83. ***Ans. (d)***

84. ***Ans. (a)***

85. ***Ans. (b)***

86. ***Ans. (c)***

87. ***Ans. (a)***

88. ***Ans. (c)***

89. ***Ans. (d)***

90. ***Ans. (b)***

91. ***Ans. (d)***

92. ***Ans. (c)***

93. ***Ans. (a)***

94. ***Ans. (a)***

95. ***Ans. (c)***

96. ***Ans. (d)***

97. ***Ans. (c)***

98. ***Ans. (b)***

99. ***Ans. (d)***

100. ***Ans. (a)***

101. ***Ans. (b)***

102. ***Ans. (b)***

103. ***Ans. (a)***

104. ***Ans. (d)***

105. ***Ans. (c)***

106. ***Ans. (d)***

107. ***Ans. (c)***

108. ***Ans. (a)***

109. ***Ans. (c)***

110. ***Ans. (b)***

111. ***Ans. (d)***

112. ***Ans. (b)***

113. ***Ans. (c)***

114. ***Ans. (a)***

115. ***Ans. (d)***

116. ***Ans. (c)***

117. ***Ans. (c)***

118. ***Ans. (a)***