B.Tech– VI Sem (MR 17) 2017-18 Admitted Students
I Mid Examination Subjective Question Bank

Subject: ELECTRICAL DISTRIBUTION SYSTEMS & AUTOMATION **Branch : EEE**

Name of the faculty: B Sampath kumar

a) Discriptive questions

Instructions:

1. All the questions carry equal marks

2. Solve all the questions

Module -I			
Q.No.	**Question**	**Bloom's Taxonomy Level**	**CO**
1	Discuss the relationship between load factor and loss factor for different load cases.	Understanding	1
	OR		
2	The annual peak load input to a primary feeder is 2000kW. The total copper loss at the time of peak load is 100kW. The total annual energy supplied to the sending end of the feeder is 6.7*106 kWh. Then: i. Determine the annual loss factor ii. Calculate the total annual copper loss energy and its value at Rs. 2.5/kWh..	Understanding	1
3	Discuss different types of loads present in distribution system and explain their characteristics?	Understanding	1
	OR		
4	Write short notes on load modeling and its characteristics.	Understanding	1
5	a) Define Load factor . 2M b) What is plant capacity factor. 2M c) Define Average load and Connected load. 2M d) Define (i) loss factor (ii) Utilization factor 2M e) Define Demand factor . 2M	Understanding	1

	OR		
6	Discuss the characteristics of the following categories of loads 10M i)Residential (ii) Agriculture (iii) Commercial (iv) Industrial	Understanding	1
7	Explain the factors effecting on designing of distribution system.	Understanding	1
	OR		
8	Show that load factor = loss factor = t/T for zero off - peak load.	Understanding	1
Module II			
1	Explain basic design practice of secondary distribution system and also discuss about secondary banking.	Understanding	2
	OR		
2	Explain design considerations of distribution feeders.	Understanding	2
3	Explain radial type feeders.	Understanding	2
	OR		
4	Explain the rating of the substation	Understanding	2
5	Discuss feeder voltage levels and feeder loading.	Understanding	2
	OR		
6	Explain the location of distribution substation.	Understanding	2
7	Explain service area with “n” primary feeders.	Applying	2
	OR		
8	Explain mesh and loop type feeders.		2
Module III			
1	(a)Write the causes for low power factor in power system? 5M	Applying	3

	(b) Explain (i). Phase advancers (ii). Static capacitors.		
	OR		
2	Show that VD 1-Φ / VD 3-Φ = 2□3 and PLS1- Φ / P LS3- Φ = 2.0 in single phase two wire ungrounded neutral?	Applying	3
3	(a) Explain the effect of shunt compensation on distribution system? 5M (b) How do you justfy economically the connection of capacitors for the improvement of p.f	Applying	3
	OR		
4	Show that VD 1-Φ / VD 3-Φ = 6 and PLS1- Φ / P LS3- Φ = 6.0 in single phase two wire uni grounded lateral with full capacity neutral.	Applying	3

Signature of the Faculty **Signature of the HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

III B.Tech II Semester I Mid Question Bank

Subject: EDSA (70226) **Branch: EEE**

Name of the Faculty: B Sampath kumar

OBJECTIVE QUESTIONS

1. The common voltage adopted for low voltage electrical distribution is_____[ ]

A)220v DC B) 230v AC 1ph

C) 400 3ph 3 wire D) 400 3ph 4 wire

2. The usual voltage level adopted for high voltage distribution network in Indian is [ ]

A)132kv B) 11kv

C) 16kv D) 400v

3. Demand factor is the ratio of [ ]

A)max demand to connected load B) total load to max demand

C) max demand to rated capacity D) none of the above

4. The coincidences factor for lighting loads in domestic/residential loads is about [ ]

A) 0.1 B) 0.5

C) 1.0 D) 0.9

5. The estimation of load in advance is commonly known as…… [ ]

A)load approach B) load forecasting

C) both a and b D) none

6. Load duration curve is between [ ]

A|)load and time duration over which it occurs B) load and time of occurrence

C) units consumed and duration in days D) power supplied and time

7. For commercial loads, the diversity factor is usually……. [ ]

A) 1.3 – 1.5 B) 1.1 – 1.2

C) 2 – 4 D) 3.2 – 3.5

8. The load factor of agriculture load is generally……. [ ]

A) 25 – 30% B) 10 – 15%

C) 20 – 25% D) 70 – 80%

9. Load factor of a power station is defined as [

A) maximum demand/average load B) average load x maximum demand

C) average load/maximum demand D) (average load x maximum demand)172

10. Load factor of a power station is generally [ ]

A) equal to unity B) less than unity

C) more than unity D) equal to zero Diversity factor is always

11. The load factor of domestic load is usually [ ]

A) 10 to 15% B) 30 to 40%
C) 50 to 60% D) 60 to 70%

12. Demand factor is defined as [ ]
A) average load/maximum load B) maximum demand/connected load
C) connected load/maximum demand D) average load x maximum load

13. High load factor indicates [ ]
A) cost of generation per unit power is increased
B) total plant capacity is utilised for most of the time
C) total plant capacity is not properly utilised for most of the time
D) none of the above

14. A load curve indicates [ ]
A) average power used during the period
B) average kWh (kW) energy consumption during the period
C) either of the above D) none of the above

15. Which plant can never have 100 percent load factor ? [ ]
A) Peakload plant B) Base load plant
C) Nuclear power plant D) Hydro electric plant

16.The area under a load curve gives [ ]
A) average demand B) energy consumed
C) maximum demand D) none of the above

17. Diversity factor has direct effect on the [ ]
A) fixed cost of unit generated B) running cost of unit generated
C) both (a) and (b) D) neither (a) nor (b)

18. Power plant having maximum demand more than the installed rated capacity will have utilisation
factor [ ]
A) equal to unity B) less than unity
C) more than unity D) none of the above

19) Which of the following is usually not the generating voltage- [ ]

A) 6.6 kV B)9.9 kV
C) 11kV D)13.2kV

20) A 3 phase 4 wire system is commonly used for- [ ]

A. Primary distribution B. Secondary distribution
C. Primary transmission D. Secondary transmission

21) The rated voltage of a 3 phase power system is given as [ ]

A. rms phase voltage B. peak phase voltage
C. peak line to line voltage D. rms line to line voltage

22)Demand interval is usually-------- [ ]

A.1 min B.5 min C.30 min D.3 hours

23)Demand factor is the ratio of----- [ ]
A.maximum demand to connected load B.total load to maximum demand
C.maximum demand to rated capacity D.none of the above

24)Load-duration curve is between-------- [ ]

A)load and time of occurrence B)load and time duration over which it occurs
C)units consumed and duration in day D)power supplied and time

25)Utilization factor is the ratio of------- [ ]

A) maximum demand to total connected load
B) maximum demand to rated capacity of the system
C)Any demand occurring in a day to maximum demand
D)Total load to maximum demand

26)The empirical relation used between load factor(l.f) and loss factor is,loss factor= [ ]

A)$0.7(l.f)+0.3(l.f)^2$ B)$0.3+(l.f)$ C) $0.3(l.f)+0.7(l.f)^2$ D)$0.7+(l.f)$

27)The coincidence factor for lighting loads in domestic/residential loads is about[]

A)0.1 B)0.5 C)1.0 D)0.9

28)power factor of domestic appliances like fans,washing machines,mixies etc in the range [ ]

A)0.75 to 0.85 B)0.4 to 0.75 C)0.4 to 0.8 D)0.6 to 0.75

29)Load growth follows----------law [ ]
A.power law B.compound interest law C.both D.none

30)A load in an area has a load factor 0.6.The approximate loss factor may be[ ]
A.0.432 B.0.7 C.0.85 D.0.92

31)Load diversity is the difference between ----------and---------- [ ]
A.sum of the peak demands of individual loads and concident maximum demand
B.Maximum demand and connected loads
C.Total connected load and Demand D.none

32)For large power loads,Distribution voltage is-------- [ ]
A.500 V dc B.400 V 3 phase ac C.11 KV 3-ph 3-wire ac D. 11 KV 3-ph 4-wire ac

33) Single-phase ac with mid point earthing is used for------ [ ]
A.bulk load distribution B.domestic loads
C.rural and agricultural loads D.industrial loads

34)For typical urban loads,peak demand can occur-------- [ ]
A.once in a day B.twice in a day C.more than twice in a day
D.cannot be predicted

35)The time interval taken for estimation of maximum demand for billing is[
]A.15 min or 30 min (in AP state) B.1 hour C.50 min D.none

36)Diversified demand also termed as-------- [ ]
A.coincident demand B.non coincident demand C.Maximum demand D.none

37)Plant factor is also known as the---------- [
]A.capacity factor B.use factor C.both D.none

39)The ratio of average power loss to the peak load power loss during a specific period of time is-------- [ ]
A.Loss factor B.Load factor C.Diversity factor D.Utilization factor

40) When the power cuncumption is high in residentioal loads [ ]
A. 3am-9am B.9am-2pm C.2pm-6pm D.7pm-12am

41) When the power cuncumption is high in commercial loads [ ]
A. 3am-9am B.9am-2pm C.2pm-6pm D.7pm-12am

42) When the power cuncumption is high in agricultuer loads [ ]
A. 3am-9am B.9am-2pm C.2pm-6pm D.7pm-12am

43) Load decrease follows----------law [ ]

A.power law B.compound interest law C.both D. None

44) The primary distribution system is known as [ ]
A.sub transmission line to substation B. Sub station to sub transmission line
C. substation to Transformer D. None

45) The secondary distribution system is known as [ ]
A.sub transmission line to substation B. Sub station to sub transmission line
C. substation to Transformer D. None

46) Three-phase ac with mid point earthing is used for------ [ ]

A.bulk load distribution B.None
C.rural and agricultural loads D.industrial loads

47) Load factor is the ratio of----- [ ]
A.maximum load to average load B.total load to maximum load
C.maximum demand to rated capacity D.none of the above

48) Loss factor is the ratio of----- [ ]
A.maximum loss to average loss B. average load to maximum loss
C.maximum demand to rated capacity D.none of the above

49) Contribution factor is the ratio of----- [ ]
A.maximum loss to average loss B. average load to maximum loss
C.maximum demand to rated capacity D.none of the above

50) Coincident factor is the ratio of----- [ ]
A.maximum loss to average loss B. average load to maximum loss
C.maximum demand to rated capacity D.none of the above

51) Feeder is designed mainly from the point of view of- [ ]
A. Its current carrying capacity B. Voltage drop in it
C. Operating voltage D. Operating Frequency

52) Distributors are designed from the point of view of - [ ]
A. Its current carrying capacity B. Operating voltage
C. Voltage drop in it D. Operating frequency

53) Transmission and distribution of electric power by underground system is superior to overhead system in respect of- [ ]
A. Apperance and public safety B. Maintenance cost
C. Frequency of faults, power failure and accidents D. All of the above

54) The main drawbacks of underground system over overhead system is/are- [ ]

A. Exposure to lighting B. Heavy initial cost
C. Exposure to atmospheric hazards such as smoke, ice, wind etc.
D. Inductive interference between power and commuication circuit

55) The main drawback of ovehead system over underground system is-[ ]
A. Underground system is more flexible than overhead system
B. Higher charging current
C. Surge problem D. High initial cost
56) For the same voltage drop, increasing the voltage of a distributor n time-[ ]
A. Reduces the x section of the conductor by n times
B. Increases the x section of the conductor by n times
C. Reduces the x section of conductor by n^2 times
D. Increases the x section of the conductor by n^2 times
57) The volume of copper required for an ac transmission line is inversely proportional to [ ]

A. Current B. Voltage C. Power factor D. Both b and c
58) In a transmission system the feeder supplies power to- [ ]

A. Transformer substations B. Service mains C. Distributors D. All
59) The most suitable practical value of primary distribution is? [ ]
A. 66 Kv B. 6.6 kV C. 230 V/ 400 V D. 22 kV
60)A ring main distributor fed at one end is equivalent to--------fed at both ends with equal voltages. [ ]
A.straight distributor B.Ring feeder C.both D.none

61)A distributor is designed from------ considerations. [ ]
A.voltage drop B.Current C.power factor D.none

62)The dc interconnector is used to----------the voltage drops in the various sections of the distributor. [ ]
A.increase B.reduce C.Both D.None

63)The most common system for secondary distribution is 400/------V,3-phase,----wire syste [ ]

A.230,4 B.440,3 C.230,2 D.440,2

64)Distribution transformer links the--------and--------systems [ ]
A.balanced and unbalanced B.primary and secondary C.both D.none

65)3-phase,4-wire ac system of distribution is used for---------load. [ ]A.unbalanced B.balanced C.both D.none

66)For purely domestic loads,----------ac system is employed for distribution. [ ]
A.3-phase 3-wire B.single phase 2-wire C.Both D.None

67)A ring main system of distribution is-------reliable than the radial system. [ ]
A.less B.more C.Equal D.none

68)The interconnected system ----------the reserve capacity of the systems. [ ]
A.increases B.decreases C.slightly decreases D.none

69)The statutory limit for voltage variations at the consumer's terminals is ----------% of rated value. [ ]
A.8 B.9 C.6 D.10

70)The service main connect the ----------and the------- [ ]
A.distributor,consumer's terminal B. feeder,consumer's terminal

C.Both D.None

71) Isolator switch in a substation is used for [ ]
A. disconnecting supply under fault condition
B. connecting the equipment and disconnecting it under no-load conditions
C. operating the switch only on load conditions
D.none of the above

72) The gas used in Gas insulated substation is [ ]
A. nitrogen B. oxygen C. air D. SF6

73)For distribution transformers %Z will be usually [ ]
A. 4 to 6% B. 10% C. 8% D. 9%
74)Breaker and a half scheme uses---------breakers per bay and two buses together [ ]

A 2 B.1 C.3 D.4

75) Gas insulated substation operates at [ ]
A.high pressure above 10 atmospheres B.5-6 atm

C.2-3 atm D.less than one atm

76)Which one of the following is not a component of Gas insulated substation [ ]
A.earth switch B.transformer C.Circuit breaker D.current transformer

77)Controlling of the Gas insulated substation is done by…… [ ]
A.control panel at remote place B.control panel placed locally
C.both B & A D.none of the two A & B

78)-------Substations are located in open space and conductors and equipment is mounted on insulators. [ ]
A.outdoor B.Indoor C.Both D.none
79)Busbars are used in Gas insulated substation to connect------- [ ]
A.to connect components that are not directly connected to each other
B.not to connect components
C. not to connect components that are not directly connected to each other
D.None
80)Outdoor substation requires----------space [ ]
A.more B.less C.Both D.none
81)The possibility of fault escalation is ----------in outdoor sub-station than that of indoor sub-station. [ ]
A.more B.less C.Both D.none

82)Majority of distribution substations are of--------type. [ ]
A.polemounted B.outdoor C.indoor D.GIS

83) Power factor correction sub-stations are generally located at the-------end of a transmission line. [ ]
A. sending B. receiving C.Both D.none

84) Underground substations are generally located in---------- [ ]

A.thickly populated areas B. villages C.Both D.none

85) An ideal location for the substation would be at the -------of load. [ ]
A.centre of massB.centre of gravity C.Both D.none

86) Pole-mounted substations are used for--------distribution. [ ]
A. secondary B. primary C.Both D.none

87) The voltage rating of the transformer in a pole-mounted sub-station is---[ ]
A.11 KV/400V B.33 KV/11 KV C.400V/11 KV D.11 KV/33KV

88) Single bus-bar arrangement in sub-stations is used for voltages less than----[ ]
A.33 KV B. 11 KV C.400V D.230 V

89) For voltages greater than 33 KV,----------busbar arrangement is employed. [ ]
A.single B.duplicate C.Both D.none

90) The KVA rating of transformer in a pole-mounted sub-station does not exceed
[ ]
A.300 KVA B.100 KVA C.200 KVA D.400 KVA

91) Reactive power compensated, when p.f is improved from cosθ1 to cos θ2 is given by(P=power and S=kva) [ ]
A) P(tan θ1-tan θ2) B) S(tan θ1-tan θ2)
C) P(sin θ1-sin θ2) D) S(cos θ1-cos θ2)

92)Series capacitor compensation is used to [ ]
A)improve p.f B)reduce line reactance
C) reduce fault levels D)compensate for reactive power of load

93)Hospitals, commercial locations etc will have p.f of------ [ ]
A)0.75-0.85 lagging B)0.65 lagging C) 0.95 lagging D)0.55 lagging

94)series capacitors are located at---- [ ]
A)sending end of the line B)middle of the line
C)receiving end of the line D)all the above

95)Multiplying factor to determine KVAR of capacitor banks is---[ ]
A)(sin θ1-sin θ2) B) cos θ1-cos θ2 C) θ1- θ2 D) tan θ1-tan θ2

96)The most suitable and best location for capacitors is---- [ ]
A)Either at the load end or at the distribution bus B)sending end

C)receiving end D)none

97)Lighting loads such as fluorescent lamps have a p.f of------- [ ]
A) 0.2 B) 0.5 to 0.6 C)0.8 to 0.9 D)1.0

98)The disadvantage of a series capacitors is---------- [ ]
A) Fault current or fault MVA is increased due to decrease of line reactance.
B) Fault current or fault MVA is decreased due to increase of line reactance
C) Fault current or fault MVA is increased due to increase of line reactance

D) Fault current or fault MVA is decreased due to decrease of line reactance

99) Series capacitors in distribution lines are protected against over voltage by---------- and--------- [ ]
A) Surge arrester, HRC fuse in series B) Surge diverter, HRC fuse in series
C) Both D) Surge arrester, Surge diverter

100) The power factor of an a.c circuit is given by------power divided by---------- power [ ]
A) active, apparent B) apparent, active C) active, reactive D) reactive, active

101) The lagging power factor is due to-----power drawn by the circuit. [ ]
A) lagging reactive B)leading reactive C)both D)none

102)Power factor can be improved by installing such a device in parallel with load which takes---------- [ ]
A) lagging reactive power B) leading reactive power C) both D) none

103)The major reason for low lagging power factor of supply system is due to the use of----------motors [ ]
A) synchronous B) stepper C) D.C D) induction

104)An over-excited synchronous motor on no load is known as----[ ]
A) synchronous condenser B) over-excited motor C) synchronous machine D) none

105) The maximum value of power factor can be--------- [ ]
A)0.5 B)0.9 C)1 D)0.4

106)By improving the power factor of the system, the kilowatts delivered by the generating station are-------- [ ]
A) decreased B) increased C)not changed D)none
107)The most economical power factor for a consumer is generally------[ ]
A) 0.7 lagging B)0.95 lagging C) unity D)0.8 leading

108)KVAR=---------tanØ [ ]
A)KW B)KVAR C)KVA D)KV

109) Phase advancers are used to improve the ----------of induction motors. [ ]
A) efficiency B)KVAR C)power factor D)KVA

110) If power factor is more, maximum KVA demand will be------and [ ]
If power factor is less, maximum KVA demand will be-------
A)more, more B)less, less C)less, more D)more, less
111) System which suffers from maximum voltage fluctuations is [ ]
a) Ring type b) Mesh type c) Radial type d) None of these

112) Light points available in the houses are [ ]
a) Voltage source b) Current source c) Power source d) All of these

113) Systems getting supply from one end only are [ ]
a) Ring type b) Mesh type c) Radial type d) All of these

114) Outdoor sub-station are preferred for voltages above [ ]
a) 3.3 kV b) 11 kV c) 33 kV d) 66 kV

115) Which of the following system is preferred for good efficiency and high economy in distribution system? [ ]
a) Single phase system
b) 2 phase 3 wire system
c) 3 phase 3 wire system
d) 3 phase 4 wire system

116) For most reliable distribution supply, the configuration used is [ ]
a) Radial main b) Ring main c) Parabolic main d) Balancing main

117) Feeder is designed mainly from the point of view of- [ ]
A. Its current carrying capacity B. Voltage drop in it
C. Operating voltage D. Operating Frequency

118) A distributor is designed from------ considerations. [ ]
A.voltage drop B.Current C.power factor D.none

119) Majority of distribution substations are of--------type. [ ]
A.polemounted B.outdoor C.indoor D.GIS

120) Diversified demand also termed as-------- [ ]
A.coincident demand B.non coincident demand C.Maximum demand D.none

121)Plant factor is also known as the---------- [ ]
A.capacity factor B.use factor C.both D.none

122) While designing the distribution to locality of one lac population with medium dense load requirement, we can employ _____ [ ]
a) radial system
b) parallel system
c) ring main system
d) any of the mentioned

123) A _____ distribution system is more reliable than the _____ [ ]
distribution system.
a) parallel, radial
b) parallel, ring

c) radial, parallel
d) ring, parallel

124) While designing the distribution sub stations by the designer, it is required to use the _____ for the discrete power tapping. [ ]
a) distributor
b) power transformer
c) distribution transformer
d) feeder

125) A transmission and distribution engineer needed to design the sub transmission substation. The tapping component needed will be ___ [ ]
a) feeder
b) distributor
c) transmitter
s) tap-changing transformer

B.Tech– VI Sem (MR 17) 2017-18 Admitted Students
I Mid Examination Subjective Question Bank

Subject: MICROPROCESSORS AND MICROCONTROLLERS
Branch : EEE
Name of the faculty: Dr. A.V.Sudhakar Reddy
a) Discriptive questions
Instructions:
1. All the questions carry equal marks

2. Solve all the questions

Module -I	
Q.No.	**Question**
1	Draw and explain architecture of 8086 microprocessor.
	OR
2	Explain register organization of 8086 microprocessor.
3	Explain the physical memory organization in an 8086 system.
	OR
4	Draw and Explain the write and read operation in minimum mode of 8086
5	Explain the physical address calculation of 8086 microprocessor.
	OR
6	Draw and explain interrupt vector table of 8086 microprocessor
7	Draw and explain in detail bit format of flag register of 8086 Microprocessor.
	OR
8	Draw and explain pin diagram of 8086 microprocessor.
Module II	

1	What do you mean by addressing modes? What are the different addressing modes supported by 8086? Explain each of them with suitable examples	Understanding	2
	OR		
2	List the different instruction types of 8086? Explain each of them with suitable examples	Understanding	2
3	What is an Assembler Directive? List and Explain any 4 Assembler Directives	Understanding	2
	OR		
4	Write a program in 8086 microprocessor to find out the smallest among 8-bit n numbers, where size “n” is stored at memory address 2000 : 500 and the numbers are stored from memory address 2000 : 501 and store the result (largest number) into memory address 2000 : 600.	Understanding	2
5	Write an ALP program using 8086 & MASM program for string manipulations a) Program for transfer block of data from one memory location to another memory location. b) Program for reverse of a given string	Understanding	2
	OR		
6	Write an ALP to perform the sum of n intergers	Understanding	2
7	Write an ALP program to find character in a string using 8086 instruction set.	Applying	2
	OR		
8	Write an ALP program using 8086 instruction set on logical and bit manipulation instructions		2
Module III			

1	Interface an 8255 with 8086 to work as an I/O port. Initialize port A as output port. Port B as input port and port C as output port. Port A address should be 0740H. Write a program to sense switch position SW0-SW7 connected at port B. The sensed pattern is to be displayed on Port A to which 8 Led are connected, while the port C lower displays number of on switches out of the total eight switches.	Applying	3
	OR		
2	Interface 4*4 Keyboard with 8086 using 8255 and write an ALP for detecting a key closure and return the key code in AL. The debouncing period for a key is 10ms. Use key debouncing technique.	Applying	3
3	Interface DAC0800 with an 8086 CPU running at 8MHz and write an ALP to generate a triangular wave of frequency 500Hz.	Applying	3
	OR		
4	Interface ADC 0808 with 8086 using 8255. Use port A of 8255 for transferring digital data output of ADC to the CPU and port C for control signal. Assume that an analog input is present at I/P2 of the ADC and a clock input of suitable frequency is available for ADC .Draw the schematic and write required ALP.	Applying	3

Signature of the Faculty **Signature of the HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)
B.Tech–ECE-VI Sem (MR 17:2017-18 Admitted Students)
I Mid Examination Objective Question Bank

Subject Name:Microprocessors and Microcontrollers
Branch: EEE
Subject Code: 70448
Name of the Faculty: Dr. A.V.Sudhakar Reddy

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1. A microprocessor is a _____ chip integrating all the functions of a CPU of a computer. [B]

a. Multiple b. Single c. double d. triple

2.Microprocessor is a/an _____ circuit that functions as the CPU of the compute [A]

a. electronic b. mechanic c. integrating d. processing

3. In Which frequency the 8086 is operated [ ]

a. 5MHz b. 8MHz c. 10MHz d. All the Above

4. The 8086 processor is ____ bit microprocessor [C]

a. 4 b. 8 c. 16 d. 32

5. The 8086 processor has following units [D]

a. Bus Interface Unit b. Execution Unit
c. Arithmetic and Logical Unit d. All the Above

6. 8086 processor has _____ Registers [ ]

a. 14 b. 18 c. 24 d. 32

7. 8086 microprocessor is a _____ Integrated Circuit

a. 20 pin IC b. 40 Pin DIP c. 60 pin DIP d. 10 pin DIP

8. The microprocessor can read/write 16 bit data from or to _____ [A]

a. memory b. I /O device c. processor d. register

9. In 8086 microprocessor , the address bus is _____ bit wide [D]

a. 12 bit b. 10 bit c. 16 bit d. 20 bit

10. The work of EU is _____ [B]

a. encoding b. decoding c. processing d. calculations

11. The 16 bit flag of 8086 microprocessor is responsible to indicate _____ [

a. the condition of result of ALU operation b. the condition of memory

c. the result of addition d. the result of subtraction

12. In 8086 Microprocessor the flag register bit 'C' indicates _____

a. Carry flag b. Condition flag c. Common flag d. Sign flag

13. In 8086 Microprocessor the flag register bit 'S' indicates _____

a. Carry flag b. Condition flag c. Common flag d. Sign flag

14. In 8086 Microprocessor the flag register bit 'O' indicates _____

a. overflow flag b. overdue flag c. one flag d. over flag

15. In 8086 Microprocessor the flag register bit 'I' indicates _____

a. Interrupt flag b. Initial flag c. Indicate flag d. Inter flag

16. The register AX is formed by grouping _____

a. AH & AL b. BH & BL c. CH & CL d. DH & DL

17. The SP is indicated by _____

a. single pointer b. stack pointer c. source pointer d. destination pointer

18. The BP is indicated by _____

a. base pointer b. binary pointer c. bit pointer d. digital pointer

19. The SS is called as _____

a. single stack b. stack segment c. sequence stack d. random stack

20. The index registers are used to hold _____

a. memory locations b. offset address c. segment memory d. offset memory

21. The BIU contains instruction queue size is _____bytes

a. 8 b. 6 c. 4 d. 12

22. The BIU prefetches the instruction from memory and store them in _____

a. queue b. register c. memory d. stack

23. Each segment register consists of _____ memory.

a. 1KB b. 64KB c. 33 KB d. 34KB

24. The DS is called as _____

a. data segment b. digital segment c. divide segment d. decode segment

25. The CS register stores instruction _____ in code segment

a. stream b. path c. codes d. Stream Line

26. The IP is _____ bits in length

a. 8 b. 12 c. 16 d. 20

27. The push source copies a word from source to_____ [ ]

a. stack b. memory c. register d. destination

28. LDS copies to consecutive words from memory to register and _____ [ ]

a. ES b. DS c. SS d. CS

29. INC instruction increments the content of destination by _____ [ ]

a. 1 b. 2 c. 30 d. 41

30. Each Segment register accommodated with _____ KB of memory [ ]

a. 16 b. 32 c. 64 d. 128

31. Code segment Register CS holds the segment address which is 4569 H Instruction pointer IP holds the offset address which is 10A0 H The physical 20-bit address is _____ [ ]

a. 46730H b. 45A30H c. 39A25H d. 47630H

32. Trap Flag is used for _____ [ ]

a. Single step control

b. It allows user to execute one instruction of a program at a time for debugging

c. When trap flag is set, program can be run in single step mode

d. All the Above

33. Directional Flag is used in [ ] a. String Operations b. Stack Operations

c. Queue Operations d. All the Above

34. NMI require _____ input to change the state [ ]

a. Edge triggered input b. Level triggered input

c. Software interrupt d. All the Above

35. The logic level at _____ pin decides whether the processor is to operate in either minimum (single processor) or maximum (multiprocessor) mode. [ ]

a. MN/MX Complement b. ALE Complement

c. BHE Complement d. S7 Complement

36. The LES copies to words from memory to register and _____

[ ]

a. DS b. CS c. ES d. DS

37. _____ output is used to decide the direction of data flow through the transceivers [ ]

a. DT/ R Complement b. INTA Complement

c. M/IO Complement d. All the Above

38. The _____ contains an offset instead of actual address

[ ]

a. IP b. ES c. SS d. SP

39. The 8086 fetches instruction one after another from _____ of memory

[ ]

a. CS b. IP c. ES d. SS

40. The BIU contains FIFO register of size 6 bytes called _____.

[ ]

a. Queue b. Stack c. Segment d. Register

41. The _____ is required to synchronize the internal operands in the processor CLK Signal

[ ] a. UR signal b. Vcc

c. AIE d. Ground

42. The pin of minimum mode AD0-AD15 has _____ address

[ ]

a. 16 bit b. 20 bit c. 32 bit d. 4 bit

43. The pin of minimum mode AD0- AD15 has _____ data bus

[ ]

a. 4 bit b. 20 bit c. 16 bit d. 32 bit

44. The address bits are sent out on lines through _____

[ ]

a. A0-A19 b. A0-17 c. D0-D17 d. C0-C17

45. _____ is used to write into memory

[ ]

a. RD complement b. WR complement c. RD/WR d. CLK

46. The functions of Pins from 24 to 31 depend on the mode in which _____ is operating [ ]

a. 8085 b. 8086 c. 80835 d. 80845

47. The RD, WR, M/IO is the heart of control for a _____ mode

[ ]

a. Minimum b. Maximum c. compatibility mode d. control mode

48. The status lines s_0, s_1, s_2 are set to 0, 0, 0. The processor will generate _____ signal [ ] a. Interrupt Acknowledgement b. Interrupt

c. Read signal d. Write signal

49. If MN/MX complement is low the 8086 operates in _____ mode
[ ]
a. Minimum b. Maximum c. both (A) and (B)
d. Medium

50. In maximum mode, control bus signal S_0, S_1 and S_2 are sent out in _____ form [ ]
a. Decoded b. Encoded c. Shared d. Unshared

51. The ___ bus controller device decodes the signals to produce the control bus signal [ ]
a. Internal b. Data c. External d. Address

52. A _____ Instruction at the end of interrupt service program takes the execution back to the interrupted program
[ ]
a. Forward b. Return c. Data d. Line

53. The main concerns of the _____ are to define a flexible set of commands [ ]
a. memory interface b. peripheral interface c. both (A) and (B)
d. control interface

54. Primary function of memory interfacing is that _____ should be able to read from and write into register
[ ]
a. Multiprocessor b. Microprocessor c. dual Processor d. Coprocessor

55. To perform any operations, the microprocessor should identify the _____ [ ]
a. Register b. Memory c. Interface d. System

56. The Microprocessor places _____ address on the address bus
[ ]
a. 4 bit b. 8 bit c. 16 bit d. 20bit

57. The Microprocessor places 16 bit address on the add lines from that address by _____ register should be selected
[ ]
a. Address b. One c. Two d. Three

58. The _____of the memory chip will identify and select the register for the EPROM [ ]
a. Internal decoder b. External decoder c. Address decoder d. Data decoder

59. Microprocessor provides signal like ____ to indicate the read operation
[ ]
a. LOW b. MCMW c. MCMR d. MCMWR

60. To interface memory with the microprocessor, connect register the lines of the address bus must be added to address lines of the _____ chip [ ]

a. Single b. Memory c. Multiple d. Triple

61. The remaining address line of _____ bus is decoded to generate chip select signal [ ]

a. Data b. Address c. Control bus d. Both (A) and (B)

62. _____ signal is generated by combining RD and WR signals with IO/M [ ]

a. Control b. Memory c. Register d. System

63. Memory is an integral part of a _____ system [ ]

a. supercomputer b. microcomputer c. mini computer d. mainframe computer

64. _____ has certain signal requirements write into and read from its registers [ ]

a. memory b. register c. both (a) and (b) d. control

65. An _____ is used to fetch one address [ ]

a. Internal decoder b. External decoder c. peripherals d. interfaces

66. The primary function of the _____ is to accept data from I/P devices [ ]

a. multiprocessor b. microprocessor c. peripherals d. interfaces

67. _____ signal prevent the microprocessor from reading the same data more than one[ ]

a. pipelining b. handshaking c. controlling d. signaling

68. Bits in IRR interrupt are _____ [ ]

a. Reset b. Set c. Stop d. Start

69. _____ generate interrupt signal to Microprocessor [ ]

a. INTR b. CLK c. HOLD d. HLDA

70. STC Stands for [ ]

a. Clear the carry flag b. Set the auxiliary carry

c. Set carry flag d. Set sign flag

71. The _____ is used to connect with 8086 microprocessor in Maximum mode [ ]

a. 8087 b. 8085 c. I/O devices d. Control unit

72. CS connect the output of _____

[ ]

a. encoder b. decoder c. slave program d. buffer

73. In which year, 8086 was introduced?

[ ]

a. 1978 b. 1979 c. 1977 d. 1981

74. Expansion for HMOS technology_____

[ ]

a. high level mode oxygen semiconductor

b. high level metal oxygen semiconductor

c. high performance medium oxide semiconductor

d. high performance metal oxide semiconductor

75. CLD performs

[ ]

a. Clear the directional flag b. Complex logic design

c. Clear data segment d. Close all

76. LAHF performs

[ ]

a. Load (copy to) AH with the low byte of the flag register.

b. Copy flag register to top of stack.

c. Copy word at top of stack to flag register

d. address leak extension

77. What is DEN?

[ ]

a. direct enable b. data entered c. data enable d. data encoding

78. In 8086, Example for Non maskable interrupts are _____.

[ ]

a. NMI b. INT 03 c. INTR d. INT 21H

79. In 8086 the overflow flag is set when _____.

[ ]

a. the sum is more than 16 bits

b. signed numbers go out of their range after an arithmetic operation

c. carry and sign flags are set

d. Subtraction

80. In 8086 microprocessor the following has the highest priority among all type interrupts [ ]

a. NMI b. DIV 0 c. TYPE 255 d. OVER FLOW

81. In 8086 microprocessor one of the following statements is not true

[ ]

a. coprocessor is interfaced in max mode

b. coprocessor is interfaced in min mode

c. I /O can be interfaced in max / min mode

d. supports pipelining

82. _____ instruction performs Shift bits of word or byte left, put zero(s) in LSB(s) [ ]

a. SHR b. SAR c. SHE d. SHL

83. Access time is faster for _____.

[ ]

a. ROM b. SRAM c. DRAM d. ERAM

84. REP instruction uses _____ register by default while execution

[ ]

a. AX b. BX c. CX d. DX

85. From the following which is the unconditional transfer instructions

[ ]

a. CALL b. RET c. JMP d. All the above

86. MOV AX,10ACH

CMC

The value of AX is _____

[ ]

a. EF52H b. DE52H c. CD52H d. Remains Unchanged

87. From the following which instruction is correct format

[ ]

a. num DB 25,50,43,76,34 b. info DB 'welcome'

c. snamedb 10 dup('-') d. All the Above

88. The _____ directive is used to tell the assembler the name of the logical segment it should use for a specified segment

[ ]

a. SEGMENT b. MACRO c. ASSUME d. PROC

89. The directive _____ informs the assembler to determine the displacement of the specified variable with respect to the base of data segment.

[ ]

a. PUBLIC b. GLOBAL c. OFFSET d. PHYSICAL

90. AAA Performs

[ ]

a. ASIC After Addition b. ASCII adjust after Addition

c. ACD Adjust After Addition d. American Adjust after Addition

91. LEA Performs

[ ]

a. Load Extra Assignment b. Load Equal or Above

c. Load Exact Answer d. Load Effective Address

92. From the following which are not string manipulation instructions

[ ] a. LODSB b. MOVSB c. SCASB d. None of the above

93. REPE works when the _____

[ ]

a. CX=0 or ZF=1 b. CX=1 or PF=1 c. CX=0 or PF=0 d. CF=0 or SF=0

94. Which of the following is not an arithmetic instruction

[ ]

a. INC b. ROL c. CMP d. DEC

95. During a read operation the CPU fetches _____.

[ ] a. a program instruction b. another address

c. data itself d. all of the above

96. Which of the following is not an 8086/8088 segment register?

[ ]

a. CS b. DS c. SS d. AS

97. _____ performs the Copy word at top of stack to flag register.

[ ]

a. POPF b. PUSHF c. POPS d. PUSHS

98. JE executed when _____

[ ]

a. ZF=0 b. OF=0 c. OF=1 d. ZF=1

99. Which group of instructions do not affect the flags

[ ]

a. Arithmetic operations b. Logic operations

c. Data transfer operations d. Branch operations

100. The result of MOV AL, 65d is to store

[ ]

a. store 0100 0010 in AL b. store 0100 0010 in AL

c. store 40H in AL d. store 0100 0001 in AL

101. Expand PPI

[ ] a. Programmable Peripheral Internet b. Programmable Peripheral Interface

c. Programmable Programable Interface d. Programmable Programable Internet

102. All the functions of the ports of 8255 are achieved by programming the bits of an Internal register called

[ ]

a. data bus control b. read logic control c. control word register

d. None

103. When the 82C55 is reset, its I/O ports are all initializes as

[ ] a. output port using mode 0 b. Input port using mode 1

c. output port using mode 1 d. Input port using mode 0

104. In 8255A _____ is used for input operation

[ ]

a. Mode 0 b. Mode 1 c. Mode 2

d. Mode 3

105. In 8255A _____ is used for handshaking operation
[ ] a. Mode 0 b. Mode 1 c. Mode 2 d. Mode 3
106. In 8255 A _____ is used to perform bidirectional operation
[ ]
a. Mode 0 b. Mode 1 c. Mode 2
d. Mode 3
107. Data transfer between the microprocessor for peripheral takes place through [ ] a. I/O port b. input port c. output port d. multi port
108. In 8255A, there are _____ I/O lines
[ ]
a. 24 b. 12 c. 20 d. 10
109. The 8255A is available with _____.
[ ]
a. 20 b. 40 c. 30 d. 10
110. ___ is used to transfer data between microprocessor and I/o process
[ ]
a. 8255b. 8279 c. 8254A d. 8237A
111. 8255A contains_____ ports each of 8 bit lines
[ ]
a. 2 b. 4 c. 5 d. 3
112. The _____ input to 8255 is usually activated by Microprocessor in system [ ]
a. Clear b. Reset c. Ports d. address bus
113. The input provided by the microprocessor to the read/write control logic of 8255 is [ ]
a. RESET b. RD c. WR d. All the above
114. In 8251A, the pin that controls the rate at which the character is to be transmitted is [ ]
a. TXC b. RXC c. TXD d. RXD
115. TXD(Transmitted Data Output) pin carries serial stream of the transmitted data bits along with

a. start bit b. stop bit c. parity bit d. all of the above
116. The signal that may be used either to interrupt the CPU or polled by the CPU is
a. TXRDY b. RXRDY c. DSR d. DTR
117. 8251 is a
a. UART b. USART
c. Programmable Interrupt controller d. Programmable interval timer/counter
118. Which of the following is not a mode of data transmission
[ ]

a. Simplex b. Duplex c. semi duplex d. half duplex

119. If the data is transmitted only in one direction over a single communication channel, then it is of

[ ]

a. simplex mode b. duplex mode

c. semi duplex mode d. half duplex mode

120. In 8251 there are _____ pins

[ ]

a. 16 b. 24 c. 28 d. 40

121. How many ports are available in 8255 Architecture

[ ]

a. 1 b. 2 c. 3 d. 4

122. An example of Parallel Data Transfer between input/output is

[ ]

a. Simple b. Strobe c. Handshake d. All the above

123. Group A in 8255 is a combination of

[ ]

a. Port A & port C upper b. Port A & port C Lower

c. Port B & port C upper d. Port B & port C Lower

124. In Mode2 PortA of 8255 can be used as

[ ]

a. Simple I/O b. Parallel c. Handshake d. None

125. 8255 is called as _____

[ ] a. Programmable Peripheral Interface b. Priority Interrupt controller

c. USART d. keyboard controller

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)
B.Tech III year II Sem
I Mid Examination Subjective Question Bank

Subject: PSOC -70218
Branch: EEE
Name of the faculty: K.Anitha Reddy

Q. No.	Question	Bloom's Taxonomy Level	CO
1.	Explain the method of obtaining B-coefficients in general transmission line loss formula.	Understanding	1
	OR		
2.	Explain the Characteristics of thermal power plant.	Understanding	1
3.	The fuel cost of two units are given by $C1= 1.6+25PG1+0.1PG1^2$ Rs/hr$C2= 2.1+32PG1+0.1PG2^2$ Rs/hr. If the total demand on the generator is 250MW, Determine the economic load scheduling of the two generators.	Evaluating	1
	OR		
4.	A generating station has 2 units having the following incremental fuel cost dC1/dPG1=0.02PG1+16.0 Rs/ MW hr dC2/dPG2=0.04PG2+20.0 Rs/ MW hr. All the units operate all the time and the permissible minimum and maximum load on each unit are 50MW and 225MW for a total load of 500MW on the station .Determine a) the real power to be generated by each unit b)the station 1 for most economical operation.	Evaluating	1
5.	Develop the condition to be satisfied for economic operation of power system considering losses.	Applying	1
	OR		
6.	Develop the condition to be satisfied for economic operation of power system without considering losses.	Applying	1

7.	Determine the savings in rupees per hour for economical allocation of load between the two units dC1/dPG1=25+0.2PG1, dC2/dPG2=32+0.2PG2. Compare with their sharing the output equally when the total output is 150MW.	Evaluating	1
	OR		
8.	A two bus system if a 100MW is transmitted from plant1to the load a transmission loss of 10MW incurred and the load of 237.04MW at bus2 with incremental costdC1/dPG1=0.02PG1+16, hr dC2/dPG2=0.04PG2+20.Determine the optimum allocation of generation for each plant when losses are included but not coordinated and when losses are coordinated.	Evaluating	1
Module II			
1.	Explain briefly about Hydro power plants models.	Understanding	2
	OR		
2.	Explain about Short term Hydro thermal Scheduling.	Understanding	2
3.	Evaluate an equation for optimization of cost for hydrothermal scheduling by using Kirchmayers method.	Evaluating	2
	OR		
4.	Evaluate an equation for optimization of cost he optimal scheduling of hydro thermal System	Evaluating	2
5.	A two plants system having a thermal station near the load r and a hydro power station at remote location .the characteristics of the station are C1=(20+0.03P1)P1 rs/hr.W2 =(8+0.0025p2)P2 m3/sec $\gamma 2$=rs $5\times10\text{-}4$/m3.the transmission loss coefficient $\beta 22$=0.0005.Determine the generation at each station and the power received by the load when the system λ= Rs 50/h.	Evaluating	2
	OR		
6.	A Steam Station and a hydro Station feed in jointly .The hydro station is run for 14 hours daily and the steam station is run for all the 24hours.The production Cost Characteristics for Steam Station is C=5+8Ps+0.05Ps2 Rs/hour. If the load on the Steam Station, when both plants are in operation is 250MW the incremental water rate of hydro plant is d_w/d_{ph}=30+0.05Ph m3/MW-SEC. The total quantity of water used during the 14hours is 500million cubic meters. Determine the load of hydro plant and cost of water use. Assume that load hydro plant is constant for the 14hours period.	Evaluating	2

7.	A two plant system having a steam plant near load centre and a hydro plant at a remote location .The load is 400MW for 14hrs a day and 200MW for 10 hours a day .The Characteristics of the units are $C1=150+60PGT_1+0.1PGT_1^2$ $W2=0.8PGH_2+0.000333PGH_2^2$.loss Coefficient $B_{22}=0.001MW^{-1}$.Determine the generation Schedule daily Operating cost of thermal plant for $\gamma 2$=RS 77.5/m3hr.	Evaluating	2
OR			
8.	A Two Plant system having a steam plant near load centre and a hydro plant at a remote location .The load is 700MW for 14hrs a day and 500MW for ten hours a day .The Characteristics of unit are C1=(24+0.02P1)P1 Rs/Hr.W2=(6+0.0025P2)P2 m3/sec. Loss Coefficient =0.0005.Determine Determine the generation Schedule daily Operating cost of thermal plant for $\gamma 2$=RS per hr/m3per sec when λ=37.99.	Evaluating	2
Module III			
1.	Explain about the Automatic Frequency and Voltage Controller.	Understanding	3
OR			
2.	Explain the need of keeping frequency constant.	Understanding	3
3.	Evaluate equation for Speed Governing System.	Evaluating	3
OR			
4.	Evaluate an equation for Generator-load system.	Evaluating	3

Signature of the Faculty **Signature of the HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

III B.Tech II Semester I Mid Question Bank

Subject: PSOC **Branch: EEE**

Name of the Faculty: K. Anitha Reddy

OBJECTIVE QUESTIONS

1	The main objective of thermal plants is to reduce	( )
A	Thermal cost	
B	Thermal cost	
C	Thermal cost and Thermal cost	
D	None of the above	
2	Economic Operation involves _____sub problems	( )
A	one	
B	Two	
C	Zero	
D	All the above	
3	The Two Sub problems of Economic Operation is	( )
A	Unit Commitment	
B	Unit Commitment	
C	Economic cost	
D	Unit Commitment and Unit Commitment	
4	The sum of power generation must be equal to	( )
A	Total load demand	
B	Total frequency	
C	generation	
D	Total Voltage	
5	Load shedding is done	( )

A To reduce heat demand

B To improve power factor

C To run equipment Efficiency

D To repair the machine

6 The Characteristics of Thermal power plant depends on ( )

A Load demand

B Cost of power generation

C Generation

D Losses

7 The input of thermal unit is expressed in ( )

A Kcal

B Kcal/hr

C hr

D MW

8 Cost of Thermal unit expressed in ( )

A Kcal

B Kcal/hr

C hr

D Kcal/Mwhr

9 Incremental Fuel Characteristics is important because it measures ( )

A Thermal efficiency

B Kcal

C time

D All the above

10 Power Generation is expressed in terms of ( )

A MW

B Kcal/hr

C hr

D Kcal/Mwhr

11 Input output Characteristics are drawn between ( )

A Fuel Vs Power

B Fuel VS PG

C Fuel VS time

D None of the above

12 Steam turbine generating unit characteristics may have ( )

A Minimum

B Minimum

C Minimum and Minimum

D None of the above

13 Incremental fuel rate or heat rate= ( )

A Input

B d(input) / d(output)

C Output

D None of the above

14 The thermal efficiency of the unit is influenced by factors ( )

A steam condition

B reheat stages

C condenser pressure

D All the above

15 The sum of incremental fuel cost and other incremental running expenses is called ( )

A Production Cost

B Thermal Cost

C Input Cost

D incremental production cost

16 The total cost of operating a system with Ng generating sets can be represented by ( )

A 1

B F=C(P)

C F =∑C(p),

D 0

17 Cost Function is given by ( )

A A + BP

B A

C A + BP + Cp2

D None of the above of the above

18 Incremental cost characteristic is given by ( )

A A+BP+Cp2

B aP+b

C a+bp2

D All the above

19 The necessary conditions for thermal unit are given by ( )

A dl/dpd=o

B dl/dpgi=0

C dl/pl=0

D None of the above

20 (PI + Po +, ... + P J)is equal to ( )

A Load Demand

B loss

C generation

D All the above

21 Transmission loss coefficient are represented by ( )

A G values

B system coefficients

C B-Coefficients

D None of the above

22 power losses in the network co

A V ( )

B IR

C i2R

D ∑3i2R

23 $B11P1^2+B22P2^2+B12P1P2=$

A Demand ( )

B generation

C PL

D All the above

24 The constraint of the System without Considering Losses is given by ( )

A ∑Pgi=PT

B ∑Pgi=PL

C ∑Pgi=PD

D None of the above of the above

25 Penalty Factor ( )

A Addition Burden

B Addition system Added

C Addition loss that gives losses

D All the above

26 When the load elements of a load curve are arranged in the order of descending magnitude ( )

A Load demand

B system planning

C Load duration Curve

D All the above

27 The ratio of average load to the maximum demand during a given period ( )

A Demand Factor

B Diversity Factor

C Load Factor

D None of the above

28 ʎ = ( )

A incremental cost =dc/dpl

B incremental cost =dc/dpg

C cost

D None of the above

29 ʎ by considering losses = ( )

A (IC)/I

B (ITL)i

C (IC)/I –(ITL)i

D (C)/I –(ITL)i

30 The curve which shows the relationship between the output power and incremental cost ( )

A heat rate

B incremental Production cost curve

C cost curve

D incremental cost curve

31 Methods of finding economic dispatch. ( )

A Load scheduling

B Unit commitment

C Load scheduling and Unit commitment

D None of the above of the above

32 Optimum allocation of number of units to be operated ( )

A Economic load dispatch

B Economic load shedding

C Economic load dispatch and Economic load shedding

D Unit commitment

33 Optimum allocation of generation to each station ( )

A Economic load dispatch

B Economic load shedding

C Economic load shedding and Economic load dispatch

D Unit commitment

34 To select the generating units that will supply the forecasted load of a system over a required period of time at minimum cost as well as provide a specified margin of the operating reserve ( )

A load demand

B load forecasting

C Spinning Reserve

D All the above

35 Constraints in unit commitment ( )

A Spinning reserve

B Thermal constraints

C Fuel constraint

D All the above

36 What is the need for unit commitment problem ( )

A Enough units will be committed to supply the system load

B To reduce the fuel cost

C For running the most economic unit

D All the above

37 The unvarying load for a whole day on the power station is known ( )

A Peak load

B base load

C peak load and base load

D None of the above

38 To maintain the continuous balance between electrical generation and varying load demand while system frequency and voltage levels are maintained constant. ( )

A fuel cost

B Power Demand

C Power System Control

D All the above

39 Cost units ( )

A RS/hr

B MW

C MW/hr

D All the above ( )

40 IFC units are

A Rs/MWhr

B MW

C MW/hr

D All the above

41 Cost curve is drawn between ( )

A Kcal/hr vs MW

B Kcal vs loss

C RS/hr vs MW

D All the above

42 Specific heat units is ( )

A kcal/kg

B Kcal

C RS

D all the above

43 The input unit of a thermal unit is ( )

A Kcal/hr

B Kcal

C RS

D all the above

44 The Optional loading of generator corresponding to the Equal Incremental cost point of all the generators equation is called ( )

A The differential Equation

B The co-ordination Equation

C he algebraic Equation

D The quadratic Equation

45 To determine the units of a plant that should operate for a particular load is the problem of ( )

A The load scheduling

B The unit commitment

C The dynamic programming

D The load scheduling and The unit commitment

46 The power plant feed a load center through a transmission network for economical loading ( )

A The incremental fuel cost should be the same for the two plants

B The two plants should share the load in the ratio of their installed capacities

C The more efficient plant should supply more load

D The incremental cost of power delivered at the load center should be the same for the plants

47 The slope of the cost curve is ( )

A straight line

B hyperbola

C at zero

D parabola

48 Constraints are classified into _____ types ( )

A equality

B inequality

C equality and inequality

D None of the above

49 The principal of Incremental costs is used ( )

A to decide the total plant capacity to be operated

B to decide the load allocation between units in operation.

C to decide the sequence of adding units

D All the above

50 The principle of Incremental cost is used ( )

A to decide the load allocation between units in operation

B to decide the total plant capacity to be operated

C to decide the sequence of adding units

D all the above

51 If a generating unit is situated near to the load center the penalty factor for that unit is ( )

A about 1

B infinity

C zero

D negative

52 The penalty factor is always ( )

A Less than 1

B more than 1

C More or less

D equal to 1

53 The largest size of hydro electric generating unit in India is ( )

A 165 MW

B 500 MW

C 310MW

D 210MW

54 Which of the following generating plant has the minimum operating cost ( )

A thermal

B nuclear

C diesel

D hydro-electric

55 Conventional hydroelectric plants are classified ( )

A run - of - river plants

B run - of – river plants with poundage

C storage type plants

D All the above

56 The pumped storage hydroelectric plants ( )

A store water to supply peak load demands,

B store water to supply at light load

C no load

D all the above

57 Capital cost of water is ( )

A one rupee

B zero

C 5rs

D all the above

58 In kirchmeryers method ( )

A cost is not considered

B cost is Considered

C cost is not considered and cost is Considered

D None of the above

59 In Kirchmayers method the penalty factor is determined in terms of ( )

A hydro &thermal

B Thermal

C Hydro

D None of the above

60 When Compared to hydro electric plant the operating cost of thermal power plant ( )

A High

B Low

C Medium

D None of the above

61 Hydro Generation is Function of ( )

A Water head

B Water Discharge

C Water flow

D Water head and water discharge

62 Long term scheduling is from ( )

A One day to one week

B One week to one year

C One day to one week and one week to one year

D None of the above

63 Short term Scheduling is done from ( )

A One day to one week

B One week to one year

C One day to one week and one week to one year

D None of the above

64 The objective function of Hydro thermal System ( )

A Minimize the fuel cost of thermal plant

B Minimize the time of operation

C Maximize the availability for hydro generation

D All the above

65 The Optimization of hydrothermal system ( )

A static optimization

B dynamic optimization

C Static optimization and dynamic optimization

D None of the above

66 A thermal plant gives minimum cost ( )

A when the constraints are satisfied

B when constraints are not satisfied

C any of the above

D None of the above

67 When Compared to thermal power plant the Capital cost of hydro power plant is ( )

A Low

B Medium

C High

D All the above

68 When compared to thermal power plant operating cost of hydropower plant ( )

A Low

B High

C Medium

D All the above

69 The optimal Scheduling problem of Thermal power plant is ( )

A Static Optimization

B Dynamic Optimization

C Static Optimization and Dynamic Optimization

D either Static Optimization and Dynamic Optimization

70 The time factor is considered in the case ( )

A Hydro plants

B Thermal plants

C neither hydro and thermal

D hydro and thermal

71 Period is not involved to do the optimization is ( )

A Hydro plants

B thermal plants

C Hydro plants and thermal

D None of the above of hydro and thermal

72 The objective of hydro thermal system is to minimize the cost of thermal plant ( )

A by considering hydro power plant as constraints

B without considering

C partial consideration

D None of the above

73 The optimal scheduling for hydro thermal system Constraints included are ( )

A Power balance equation

B hydro generation

C water availability equation

D all the above

74 Hydro power plants are used for ----------operation ( )

A peak load

B base load

C peak and base load

D None of the above

75 As far as hydro power plants are used as base load operation because ( )

A Their Capital cost is high

B Their operation is easy

C Capital cost is low

D their efficiency is low

76. A thermal power plant gives minimum cost per unit of generated when used as ( )

A Peak load

B Base load

C Peak load and base load

D None of the above

77 Hydro thermal coordination is necessary only in countries with ( )

A Ample coal resources

B Ample water resources

C Ample coal resource and ample water resource

D None of the above

78 In short term hydro thermal coordination ( )

A no spill curve is used

B spill curve is used

C here no rule curve due to constraints

D None of the above

79 The units of incremental water rate are ( )

A Rs/hr

B m3/MW-sec

C m3/hr

D All of these

80 In a long term coordination ( )

A Basic rule curve is plotted

B no spill curve

C no full reservoir storage curve

D All of these

81 dwj/dphj is called as ( )

A incremental water rate

B incremental fuel cost

C cost term

D None of the above

82 Short term Coordination is done at ( )

A certain period of time

B all the time

C no period is involved

D None of the above

83 In a two plant system the load is connected at plant 2 the loss coefficients ( )

A B11,B12,B22 are non zero

B B11 and B12 are non zero but B22 is zero

C B11 is non zero B12 and B22 is zero

D B12 and B22 are zero but B1 Is non zero

84 The cost of generation is theoretical minimum if ( )

A the operational constraints are considered

B the system constraints are considered the system constraints are considered

C the operational constraints are considered and

D the constraints are not considered

85 The two bus system when PG1=128.57MW,PG2=125MW ,PL=16.53MW then PD= ( )

A 230MW

B 231MW

C 236MW

D 237MW

86 In water continuity equation J is ( )

A water discharge

B water in flow

C Head

D All the above

87 The objective of hydro thermal coordination is a combined system is to supply power as per ( )

A load demand

B Generation

C load cycle

D All the above ( )

88 In order to derive B coefficient

A power factor of plants remain constant

B Plant currents must maintain constant

C Voltage Magnitude at every plant bus remains constant

D All the above

89 When the load is at 2^{nd} plant and the PG1=200MW,PL=20MW thenB11= ( )

A 0.0001MW-1

B 0.0005Mw-1

C 0

D None of the above

90 The units of B Coefficients is ( )

A MW

B MW-1

C Hr

D MW/hr

91 The optimization of hydro plant is ( )

A Dynamic Optimization

B Static Optimization

C Dynamic Optimization and Static Optimization

D None of the above of static and dynamic

92 Ho= ( )

A water head correction factor

B non effective discharge

C Storage

D basic water head

93 PL = ( )

A power Generation

B Power Demand

C Transmission power loss

D All the above

94 Head units ( )

A Rs

B Mt

C Mw

D None of the above

95 The fuel cost of meaningful only is case of ( )

A Hydro station

B Thermal

C Nuclear

D None of the above

96 The slope of the cost curve is ( )

A dCi/dpg

B dPg/dci

C dci

D dPg/dt

97 The principal of Incremental costs is used ( )

A to decide the total plant capacity to be operated

B to decide the load allocation between units in operation.

C to decide the sequence of adding units

D all the above

98 Types of in equality constraints ( )

A Voltage constraints

B Phase angle constraints

C Tap changing constraints

D All the above

99 Equality constraints is ( )

A total generation is equal to total demand

B total generation is less than demand

C total generation is equal to total demand and total generation is less than demand ( )

D None of the above

100 The Input-output characteristic is plotted

A Fuel Input and power output

B Fuel Input and time

C Fuel rate and power and output

D Fuel rate and energy output.

101 The exciters are classified into _____ types. ( )

A 1

B 2

C 3

D 4

102 Units for speed regulation of governor is ( )

A HZ

B HZ per MVA

C HZ per MW

D NONE OF THE ABOVE

103 Normally the time constant of a speed governor s less than_____ms ( )

A 1000

B 100

C 10

D 0.1

104 As the speed of an alternator increases ( )

A the frequency increases

B the frequencies decreases

C the frequency remains constant but power factor decreases

D None of the above

105 As the speed increases the fly balls moves _____. ( )

A Outwards

B Inwards

C outwards and inwards

D None of the above

106 How is the voltage and frequency controlled in automatic generation control ( )

A By controlling the excitation

B By controlling the turbine action

C Turbine speed control for voltage and excitation control for frequency

D Excitation control for voltage and turbine speed control for voltage.

107 Which among the following factors influence the cost of generation of electric power? ( )

A Generator efficiency

B Fuel cost

C Transmission losses

D All of these

108 _____provides a steady state power output settings for the turbine ( )

A Speed Changer

B hydraulic amplifier

C All the above

D None of the above

109 Hydraulic Amplifier Consists of ( )

A pilot value

B oil servo motor

C pilot value and oil servo motor

D None of the above

110 _____is the heart of speed governing system ( )

A fly ball speed governor

B pilot value

C oil servo motor

D all the above

111 Speed governor system controls ( )

A Voltage

B Frequency

C Power

D all the above

112 Automatic voltage and frequency control controls ( )

A Voltage

B Frequency

C voltage and frequency
D None of the above

113 Voltage is controlled in AV&F C by controlling ( )
A Excitation
B steam value controller
C Excitation and steam value controller
D None of the above

114 Frequency in AV&F controller is controlled by ( )
A Excitation
B steam value controller
C Excitation and steam value controller
D None of the above

115 LFC Loop control controls the ( )
A real power and frequency
B reactive power &voltage
C real power and frequency and reactive power &voltage
D None of the above

116 AVR loop regulates the ( )
A real power &frequency
B Q &V
C real power &frequency and Q &V
D None of the above

117 Steam value controller controls ( )
A input of the turbine
B Frequency
C Voltage
D None of the above

118 Control area consists of ( )
A speed governing system
B Turbine
C generator load model
D None of the above

119 The input for the turbine
A Steam
B Water
C steam and water
D None of the above

120. Regulation = ( )
A Change in frequency
B increase in power
C ratio of Change in frequency / increase in power
D Speed

121 Regulation is represented by ( )
A D

B S
C T
D K

122 Regulation units is ( )
A HZ
B MW
C HZ/MW
D None of the above

123 Speed units are ( )
A MW
B HZ
C MW and HZ
D None of the above

124 Generating power units are ( )
A MW
B HZ
C Volts
D Ampere

125 As Speed increases the fly ball moves ( )
A Inwards
B Outwards
C inwards and outwards
D None of the above

Signature of Faculty **Signature of HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Department of Electrical and Electronics Engineering

III B.Tech. II Sem (MR 17 Regulations)

I Mid Examination Subjective Question Bank

Subject:70347 -Renewable Energy Sources **Branch : EEE**

Name of the faculty: Mr.Ch. Narendra Kumar

Q. No.	Question	Bloom's Taxonomy Level	CO
1.	Explain about classification of energy resources	Understanding	1
	OR		
2.	Explain about the solar radiation geometry	Understanding	1
3.	Calculate the number of day light hours at Bangalore on 21 June and 21 December in a leap year. The latitude of Bangalore is 12^o 58'	Applying	1
	OR		
4.	Explain about the advantages and limitations of renewable energy sources.	Understanding	1
5.	Explain about pyrheliometers.	Understanding	1
	OR		
6.	Derive the expression for solar radiation on titled surface.	Applying	1
7.	Calculate the sun's altitude angle and Azimuth angle at 7:30 am solar time on August 1 for a location at 400N latitude.	Applying	1
	OR		
8.	Explain about solar radiation data	Understanding	1
	Module II		
1.	Explain flat plate collector with neat sketch	Understanding	2

OR			
2.	Classify focusing types of collectors with neat sketches	Understanding	2
3.	Explain the advantages and disadvantages of concentrating collectors over flat plate collectors	Understanding	2
OR			
4.	Explain about the principle of operation and description of non convective solar pond	Understanding	2
5.	Illustrate advantages and disadvantages of photovoltaic solar energy conversion.	Understanding	2
OR			
6.	Explain with neat sketches about solar water heating	Understanding	2
7.	With a neat sketch explain about solar distillation	Understanding	2
OR			
8.	Explain design principle and constructional details of a Box type solar cooker	Understanding	2
Module III			
1.	Explain with neat sketch the working of a wind energy system with main components	Understanding	3
OR			
2.	Explain about Horizontal Axis Windmills with neat sketches	Understanding	3
3.	Explain the advantages and disadvantages of horizontal and vertical axis wind mills	Understanding	3
OR			

4.	Explain the advantages and disadvantages of horizontal and vertical axis wind mills	Understanding	3
5.	Determine the wind mill rotor diameter to operate a centrifugal pump, which will have a discharge of 40000 litres/day with a total head of 10m. The pump operates for 10 hours in a day. The rated speed of wind is 6 m/s. The power coefficient is 0.3. Density of air is 1.2 kg/m3. Assume transmission efficiency 95%, pump efficiency as 35%.	Applying	3
OR			
6.	Derive the expression for power in wind mill	Applying	3

Signature of the Faculty **Signature of the HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)
III B.Tech II Sem (MR17 Regulations)
Subject: 70347 - RENEWABLE ENERGY SOURCES
Branch: EEE **Name of the Faculty: Mr.Ch. Narendra Kumar**

MULTIPLE CHOICE QUESTIONS

MODULE I

1 The predominant source of energy on earth is [ ]
a. Electricity
b. Natural Gas
c. The Sun
d. Plants

2 In what form can solar energy be used? [ ]
a. Thermal energy
b. Electrical energy
c. Mechanical Energy
d. All of above

3 Solar energy travels through space by the process of [ ]
a. Conduction
b. Convection
c. Radiation
d. Transportation

4 The value of solar constant is approximately [ ]
a. 6.5 kW/m^2
b. 1.36 kW/m^2
c. 3.64 kW/m^2
d. 10 kW/m^2

5 Pyranometer is an instrument used for measuring the [ ]
a. Temperature of solar photovoltaic cell
b. Solar irradiance of a solar photovoltaic cell
c. Wind speed of a solar photovoltaic cell
d. Efficiency of a solar photovoltaic cell

6 A pyrheliometer is an instrument used to measure the [ ]
a. Temperature of solar photovoltaic cell
b. Intensity of direct solar radiation at normal incidence
c. Intensity of indirect solar radiation
d. Efficiency of a solar photovoltaic cell

7 The term beam solar radiation is related to [ ]
a. Small hydropower
b. Flat plate solar collector
c. Turbine
d. Coal extraction mechanism

8 Sunlight light reaches the earth through [ ]
a. Direct radiation
b. Diffuse radiation
c. Scattered radiation
d. All of above

9 Solar radiation that is received after it changes its direction due to reflection and scattering in the atmosphere is called [ ]
   a. Diffused radiation
   b. Scattered radiation
   c. Beam radiation
   d. Radiation

10 Solar radiation that has not been absorbed or scattered and reaches the earth surface directly is called [ ]
   a. Beam radiation
   b. Scattered radiation
   c. Diffused radiation
   d. Radiation

11 The total solar radiation received at any point on the earth's surface is termed as [ ]
   a. Insulation
   b. Insolation
   c. Radiation
   d. Insulated radiation

12 **The power from the sun intercepted by the earth is approximately** [ ]
   a. 1.8×10^{8} MW
   b. 1.8×10^{11} MW
   c. 1.8×10^{14} MW
   d. 1.8×10^{17} MW

13 **The extraterrestrial radiation flux varies by ____ % over a year.** [ ]
   a. ± 1.1
   b. ± 2.2
   c. ± 3.3
   d. ± 4.4

14 **Absorption of Solar radiations at earth's surface occur due to presence of** [ ]
   a. Ozone
   b. Water vapours
   c. Carbon di-oxide
   d. All of the above

15 **The zenith angle is the angle made by the sun's rays with the ____ to a _____ surface.** [ ]
   a. normal, horizontal
   b. tangent, horizontal
   c. normal, vertical
   d. tangent, vertical

16 **Solar radiation flux is usually measured with the help of a** [ ]
   a. Anemometer
   b. Pyranometer
   c. Sunshine recorder
   d. All of the above

17 **The angle made by the plane surface with the horizontal is known as** [ ]
   a. Latitude
   b. Slope
   c. Surface azimuth angle

d. Declination

18 **The angle made in the horizontal plane between the horizontal line due south and the projection of the normal to the surface on the horizontal plane is** [ ]

a. Hour angle
b. Declination
c. Surface azimuth angle
d. Solar altitude angle

19 Surface azimuth angle varies from [ ]

a. 0 to 90°
b. -90 to 90°
c. 0 to 180°
d. -180° to 180°

20 **The hour angle is equivalent to** [ ]

a. 10° per hour
b. 15° per hour
c. 20° per hour
d. 25° per hour

21 **The complement of zenith angle is** [ ]

a. Solar altitude angle
b. Surface azimuth angle
c. Solar azimuth angle
d. Slope

22 **The correction has a magnitude of ___ minutes for every degree difference in longitude** [ ]

a. 2
b. 4
c. 6
d. 8

23 **The global radiation reaching a horizontal surface on the earth is given by** [ ]

a. Hourly beam radiation + Hourly diffuse radiation
b. Hourly beam radiation – Hourly diffuse radiation
c. Hourly beam radiation / Hourly diffuse radiation
d. Hourly diffuse radiation / Hourly beam radiation

24 **The ratio of the beam radiation flux falling on a tilted surface to that falling on a horizontal surface is called the** [ ]

a. Radiation shape factor
b. Tilt factor
c. Slope
d. None of the above

25 The sun subtends an angle of _____ minutes at the earth's surface. [ ]

a. 22
b. 32
c. 42
d. 52

26 The value of Solar Constant is [ ]

a. 1347 W/m^2
b. 1357 W/m^2

c. 1367 W/m^2
d. 1377 W/m^2

27 **Solar radiation received on the earth surface lies within the range of** [ ]
a. 0.2-0.4 microns
b. 0.38-0.78 microns
c. 0-0.38 microns
d. None of these

28 **Insolation is referred to as** [ ]
a. Direct radiation received at any time
b. Diffuse radiation received at any time
c. Total radiation received per unit time per unit area
d. None of these

29 What is angle of declination on 305th day of year and what day is it? [ ]
a. -23.26º, November 2
b. -15.06º, November 1
c. -18.96º, November 2
d. -10.52º, November 1

30 The time from sunrise to sunset is termed as _____ [ ]
a. Slope
b. Day length
c. Local solar time
d. Solar intensity

31 LST stands for _____ [ ]
a. Local standard time
b. Local solar temperature
c. Low surface temperature
d. Land surface temperature

32 What is the angle of declination on May 12 considering it's a leap year? [ ]
a. 20.34 º
b. 22.85 º
c. 29.42 º
d. 12.4 º

33 Most of the data on solar radiation received on the surface of the earth are measured by [ ]
a. Solarimeter
b. Pyranometer
c. Pyheliometer
d. Sunshine recorder

34 Which of the following energy has the greatest potential among all the sources of renewable energy? [ ]
a. Solar energy
b. Wind Energy
c. Thermal energy
d. Hydro-electrical energy

35 In what form is solar energy is radiated from the sun? [ ]
a. Ultraviolet Radiation
b. Infrared radiation
c. Electromagnetic waves
d. Transverse waves

36 Units for solar radiations _____ [ ]

a. cal/cm^2/day
b. cal/mtrs
c. langleys
d. both A&B

37 The duration of bright sunshine in a day is measured by means of a _____ [ ]

a. Sunshine recorder
b. Solarimeter
c. Pyranometer
d. Pyrheliometer

38 What is 'n' in the following solar intensity formula? [ ]

$I = I_{sc} \{1 + 0.033\cos (360n/365)\}$

a. Day of the year
b. Month of the year
c. The year
d. Week of the year

39 When the sun is directly on the top of head, it as referred to _____ [ ]

a. Zenith
b. Azimuth
c. Declination
d. Hour angle

40 Radiation intensity 'I' normal to the surface is given by _____ [ ]

a. $I\cos\theta$
b. $I\tan\theta$
c. $I\cot\theta$
d. $I\sin\theta$

41 By which of the following symbol is solar Declination denoted [ ]

a. δ
b. ρ
c. Δ
d. γ

42 **The following is (are) laws of black body radiation.** [ ]

a. Plank's law
b. Stefan-Boltzmann law
c. both (A) and (B)
d. None of the above

43 **Which of these factors are responsible for variation in Insolation?** [ ]

a. The angle of inclination of the sun's rays
b. The length of the day
c. The transparency of the atmosphere
d. All of the above

44 The annual average daily diffuse radiation received over the whole country is around [ ]

a. 100 langleys
b. 150 langleys
c. 175 langleys
d. 200 langleys

45 The annual average daily global radiation received over the whole country is around [ ]
   a. 250 langleys
   b. 350 langleys
   c. 450langleys
   d. 550langleys

46 Peak value of solar radiation generally measure in april or may with parts of _____ over 600 langleys [ ]
   a. Rajasthan
   b. Gujarat
   c. Rajasthan & Gujarat
   d. None of the above

47 Solar radiation incident outside the earth's atmosphere is called [ ]
   a. extraterrestrial radiation.
   b. Terrestrial radiation
   c. Incidence radiation
   d. None of the above

48 is a term used to describe infrared radiation emitted from the atmosphere [ ]
   a. terrestrial radiation
   b. extraterrestrial radiation.
   c. Incidence radiation
   d. None of the above

49 A shadow from a vertical stick at noon is longer than on any other day during the [ ]
   a. winter solstice
   b. spring equinox
   c. summer solstice
   d. fall equinox

50 Earth's North Pole is not pointing toward the Sun or away from the Sun during [ ]
   a. winter solstice
   b. spring equinox
   c. summer solstice
   d. lunar first quarter

MODULE II

51 **Direct Solar energy is used for** [ ]
   a. Water heating
   b. Distillation
   c. Drying
   d. All of the above

52 A liquid flat plate collector is usually held tilted in a fixed position, facing _____ if located in the northern hemisphere. [ ]
   a. North
   b. South
   c. East
   d. West

53 The collection efficiency of Flat plate collector can be improved by [ ]
   a. putting a selective coating on the plate

b. evacuating the space above the absorber plate
c. both (A) and (B)
d. None of the above

54 The efficiency of various types of collectors _____ with _____ temperature. [ ]
a. increases, decreasing
b. decreases, increasing
c. remains same, increasing
d. depends upon type of collector

55 Maximum efficiency is obtained in [ ]
a. Flat plate collector
b. Evacuated tube collector
c. Line focussing collector
d. Paraboloid dish collector

56 The following type of energy is stored as latent heat [ ]
a. Thermal energy
b. Chemical energy
c. Electrical energy
d. Mechanical energy

57 Which of the following type of collector is used for low temperature systems? [ ]
a. Flat plate collector
b. Line focussing parabolic collector
c. Paraboloid dish collector
d. All of the above

58 In the paraboloid dish concept, the concentrator tracks the sun by rotating about [ ]
a. One axes
b. Two axes
c. Three axes
d. None of the above

59 Which type of dryer can be used to dry fruits and vegetables using renewable energy? [ ]
a. Solar dryer
b. Oil furnace
c. Coal furnace
d. Wood-based furnace

60 Solar photovoltaic cell converts solar energy directly into [ ]
a. Mechanical energy
b. Electricity
c. Heat energy
d. Transportation

61 What does SPV stand for with respect to solar energy? [ ]
a. Solar photovoltaic
b. Solid platevoltaic
c. Solar platevoids
d. None of the above

62 _____is a glazing which limits the radiation and convection heat losses [ ]
a. Absorber plate
b. Selective surface

c. Insulation
d. Transparent cover

63 .To how many types are flat plate collectors divided depending on type of heat transfer fluid? [ ]
a. 2
b. 3
c. 4
d. 5

64 What are provided to minimize heat loss? [ ]
a. Absorber plate
b. Surface plate
c. Insulation
d. Casing

65 Which part of flat plate collectors is coated in black? [ ]
a. Transparent cover
b. Absorber plate
c. Insulation
d. Fins

66 In which collector does air flow without any obstruction? [ ]
a. Porous absorber plate
b. Non-porous absorber plate
c. Over lapped glass absorber
d. Finned absorber

67 In which absorber matrix material is arranged and the back absorber plate is eliminated? [ ]
a. Porous absorber plate
b. Non-porous absorber plate
c. Over lapped glass absorber
d. Finned absorber

68 The function of a solar collector is to convert..... [ ]
a. Solar Energy into Electricity
b. Solar Energy radiation
c. Solar Energy thermal energy
d. Solar Energy mechanical energy

69 Reflecting mirrors used for exploiting solar energy are called..... [ ]
a. Mantle
b. Ponds
c. Diffusers
d. Heliostats

70 Flat plate collector absorbs _____ [ ]
a. Direct radiation only
b. Diffuse radiation only
c. Direct and diffuse both
d. All of the above

71 Most widely used solar material is _____ [ ]
a. Arsenic
b. Cadmium
c. Silicon
d. steel

72 Photovoltaic cell or solar cell converts _____ [ ]
a. Thermal energy into electricity
b. Electromagnetic radiation directly into electricity
c. Solar radiation into thermal energy
d. Solar radiation into kinetic energy

73 Temperature attained by a flat-plate collector is of the _____- [ ]
a. Order of about 90^0C
b. Range of 100^0C to 150^0C
c. Above 150^0C
d. None of the above

74 The voltage of a single solar cell is _____ [ ]
a. 0.2 v
b. 0.5 v
c. 1.0 v
d. 2.0 v

75 Photovoltaic cell are made up of [ ]
a. Conductor material
b. Semi conductor material
c. Insulators
d. All of the above

76 Temperature attained by cylindrical parabolic collector is of the order of [ ]
a. 50 – 100 °C
b. 100 – 150 °C
c. 150 – 200 °C
d. 200 – 300 °C

77 Who discovered the photovoltaic effect [ ]
a. American Physicist Enrico Fermi
b. Italian Physicist Alessandro Volta
c. German Physicist Heinrich Rudolf Hertz
d. French Physicist Edmond Becquerel

78 The sun tracking is needed in the case of [ ]
a. Flat plate collector
b. Cylindrical parabolic and paraboloid
c. Both of them
d. None of these

79 A solar pond is a combination of which of the following combinations? [ ]
a. Solar energy collection & heat storage
b. Solar energy storage & heat collection
c. Solar energy collection & energy storage
d. None of the above

80 What material does a solar pond contain? [ ]
a. Salt
b. Sugar
c. Stone
d. Lime

81 The cylindrical Parabolic collector is oriented with the focal axis pointed in the [ ]
a. East –West direction
b. North –South direction

c. East –West direction & North –South direction
d. None of the above

82 The amount of photo generated current increases slightly with increase in [ ]
a. Temperature
b. Photons
c. Diode current
d. Shunt current

83 _____ photo voltaic devices in the form of thin films. [ ]
a. Cadmium Telluroide
b. Cadmium oxide
c. Cadmium sulphide
d. Cadmium sulphate

84 Which of the following is NOT utilized in the process of harnessing solar energy? [ ]
a. Gas
b. Mirror
c. Steam
d. Photovoltaic cell

85 The absorber located at focus of Point Focusing Collector is made of [ ]
a. Copper-steel
b. Aluminium-copper
c. Zirconium-copper
d. . None of the above

86 Pebble bed storage is the _____ type of solar energy storage [ ]
a. Mechanical
b. Electrical
c. Chemical
d. Thermal

87 Concentration ratio is high in case of _____ collectors [ ]
a. Flate plate collector
b. Parabolic collectors
c. Mirror strip collector
d. None of the above

88 Combination of solar cells (Photo-voltaic cells) designed to increase the electric power [ ]
output is called a _____.
a. Solar cell
b. Solar module
c. Solar array
d. Both B & C

89 Thermal energy from solar pond is used to drive a _____heat engine [ ]
a. Carnot cycle
b. Joule cycle
c. Atkinson cycle
d. Rankine cycle

90 Fresnel lens collector is _____type of collectors [ ]
a. Line focusing
b. Point focusing
c. Flat plate collector

d. None

91 The refrigeration techniques used for solar cooling is [ ]
a. Vapour Compression
b. Absorption
c. Both a & b
d. None

92 CPC reflectors can be designed for _____ absorber shapes [ ]
a. Flat one sided absorber
b. Flat two sided absorber(fin)
c. Wedge-like absorber
d. All the above

93 _____ involves a material that undergoes no change in phase over the temperature domain encountered in the storage process [ ]
a. Sensible heat storage
b. Latent heat storage
c. Packed bed storage
d. Water storage

94 Central receiver system uses _____of flat tracking mirror scaled heliostats to reflect the solar energy to central receiver mounted on tower. [ ]
a. 1-10
b. 10-100
c. 100-10000
d. None of the above

95 Applications of Solar air heaters [ ]
a. Heating buildings
b. Drying agricultural produce and lumber.
c. Heating green houses.
d. All of the above

96 The factors influencing the electrical design of the solar array [ ]
a. The sun intensity
b. The sun angle
c. The operating temperature
d. All of the above

97 Solar water heating systems that use an _____as a antifreeze solution to heat-transfer fluid have effective freeze protection as long as the proper antifreeze concentration is maintained. [ ]
a. propylene glycol
b. ethylene glycol
c. propylene glycol & ethylene glycol
d. None of the above

98 First solar cell was invented by [ ]
a. George Fritts
b. Jefferson Fritts
c. Charles Fritts
d. Fornster Fritts

99 Which of the following solar cookers is the most efficient and has the shortest cooking time? [ ]
a. Box cooker
b. Parabolic cooker

c. Panel cooker
d. Cardboard type cooker

100 _____technique are used for distillation [ ]
a. Flash Distillation
b. Vapor Compression Process
c. Solar Distillation
d. All the above

MODULE III

101 What kind of energy does a wind turbine use? [ ]
a. Kinetic energy
b. Potential energy
c. Chemical Energy
d. Thermal energy

102 Which of the following states in India ranks first in the installation of wind power? [ ]
a. Gujarat
b. Andhra Pradesh
c. Maharashtra
d. Tamil Nadu

103 Horizontal axis windmills of modern design can [ ]
a. Always turn towards the direction of the wind
b. Never adjust the energy output
c. Never turn towards the direction of the wind
d. None of the above

104 The maximum energy conversion efficiency of a wind turbine for a given swept area is [ ]
a. 25.1%
b. 50.4%
c. 59.3%
d. 99.9%

105 If the velocity of wind is doubled, then the power output will increase by [ ]
a. 10 times
b. 8 times
c. 2 times
d. 6 times

106 The term Darrious&Savonius rotor are related to [ ]
a. Small hydropower
b. Wind energy
c. Turbine
d. Coal extraction mechanism

107 Power output from a wind energy electric generator is directly proportional to [ ]
a. wind velocity
b. Square of wind velocity
c. Cube of wind velocity
d. Square root of wind velocity

108 Another name for a windmill is [ ]
a. Wind farm
b. Propeller

c. Wind station
d. Wind turbine

109 A place where many wind turbines are installed together to produce electricity is called a [ ]
a. Wind farm
b. Propeller collection
c. Wind station
d. Wind turbine station

110 Wind blows because of a difference in [ ]
a. Temperature
b. Latitude
c. Longitude
d. Height

111 Wind turbines using aerodynamic lift produce more energy for a given area than wind turbines using aerodynamic drag as the [ ]
a. Lifting force pushes the blade in the direction of the wind
b. Lifting force mis roughly perpendicular to the local flow fields
c. Lifting force produces more torque
d. Drag services capture more energy because of greater friction on the blade surfaces

112 The relationship between power available from wind 'P' and wind velocity 'v' is [ ]
a. $P \propto v$
b. $P \propto v^2$
c. $P \propto v^3$
d. $P = v$

113 An anemometer is an instrument used for measurement of [ ]
a. Solar radiation
b. Wind speed
c. Temperature gradient
d. Depth in ocean

114 Lower speed wind turbines are mainly driven by [ ]
a. Drag forces
b. Lift forces
c. Push forces
d. None of the above

115 The torque causing the rotation of a rotor is due to the [ ]
a. Drag force
b. Gravitational force
c. Force of lift
d. Axial thrust

116 With increase in height, wind speed [ ]
a. Increases
b. Decreases
c. Remains the same
d. None of the above

117 Wind power plants are required to have a large rotor size for large power output due to [ ]
a. Low power density of air stream

b. Lift force acting perpendicular to the direction of wind flow
c. Lift force being more than drag force
d. Drag force acting perpendicular to lift force

118 Which of the following forces act on the blades of wind turbine rotor? [ ]
a. Lift force
b. Drag force
c. Both (a) & (b)
d. None of the above

119 Wind machine with Darrious type of rotor is a [ ]
a. Vertical axis machine
b. Horizontal axis machine
c. Machine that can spin in one direction only
d. None of the above

120 During the day, the surface wind flows [ ]
a. From sea to land
b. From land to sea
c. On the surface of the sea
d. On the surface of land

121 Air density at standard conditions is about [ ]
a. 1.885 kg/m^3
b. 2.55 kg/m^3
c. 1.226 kg/m^3
d. 3.267 kg/m^3

122 The main disadvantage of wind power is that [ ]
a. It is available only in coastal areas
b. Wind energy systems are noisy when in operation
c. Large land area is required
d. The capacity utilization is less

123 Wind energy conversion devices based on drag force [ ]
a. Move faster than wind
b. Move slower than wind
c. Move slower than wind
d. Do not depend on the velocity of wind

124 **The rate of change of wind speed with height is called** [ ]
a. Wind shear
b. Wind rose
c. Wind solidity
d. None of the above

125 **The wind intensity can be described by** [ ]
a. Reynolds number
b. Mach number
c. Beaufort number
d. Froude number

Signature of the faculty **Signature of the HOD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

M.Tech–I Sem (MR 18-2019-20Admitted Students)

I mid Subjective Examination Question Bank

Subject: SWITCHGEAR & PROTECTION **Branch: EEE**

Name of the faculty: Dr. K.EZHIL VIGNESH

Q. No.	Question	Bloom's Taxonomy Level	CO
	Module I		
1.	Explain the principle of operation of an air-blast circuit breaker. What are the advantages and disadvantages of using air as the arc quenching medium	Understanding	CO1
	OR		
2.	Explain the constructional details of SF6 circuit breaker and its operation	Understanding	CO1
3.	Derive the expression for average and max Rate of Rise of Restriking Voltage (RRRV) in a C.B	Evaluating	CO1
	OR		
4.	(i)Illustrate the current chopping? Explain how can the effect of current chopping be minimized (ii) Determine various types of ratings of a circuit breaker and specification	Evaluating	CO1
5.	Describe the constructional details of vacuum circuit breaker and its operation	Understanding	CO1
6.	Describe the constructional details of minimum oil circuit breaker and its operation	Understanding	CO1
7.	A 5M0 Hz, 11 kV, 3-phase alternator with earthed neutral has a reactance of 5Mohms per phase and is connected to a bus-bar through a circuit breaker. The distributed capacitance up to circuit breaker between phase and neutral in 0·01μF.Determine (i) peak re-striking voltage across the contacts of the breaker (ii) Frequency of oscillation (iii) the average RRRV upto first peak	Evaluating	CO1
8.	Assess the importance of recovery rate theory and energy balance theory of arc interruption in a circuit breaker and also Discuss about auto reclosures	Evaluating	CO1
	Module – II		

1.	plain the following terms as applied to protective relaying : (i) Pick-up value (ii) Current setting (iii) Plug-setting multiplier (iv) Time-setting multiplier	Understanding	CO2
	OR		
2.	Explain the operating principle, constructional features and area of applications of power directional relay.	Understanding	CO2
3.	Assess the importance of any two type of electromagnetic attraction relay	Evaluating	CO2
	OR		
4.	Compare the merits and demerits of static relays over electromagnetic relays also mention its applications? Define Static Relay?	Evaluating	CO2
5.	Explain the construction and principle of operation of an induction type directional over Current relay.	Understanding	CO2
	OR		
6.	Explain the working principle of distance relays with sketches and their R-X diagrams for the Reactance relay	Understanding	CO2
7.	Explain the working principle of distance relays with sketches and their R-X diagrams for the Impedance relay	Understanding	CO2
	OR		
8.	Explain the working principle of distance relays with sketches and their R-X diagrams for the Mho relay	Understanding	CO2
	Module –III		
1.	Classify different protection schemes normally used for protection of a power transformer from internal faults? Discuss one of them in brief	Analyzing	CO3
	OR		
2.	List out the protection of an alternator from turn-to-turn fault on the same phase winding?	Analyzing	CO3
3.	Explain the Percentage Differential Protection on Transformer	Understanding	CO3
	OR		
4.	Explain the construction and working of Buchholz relay	Understanding	CO3

Signature of the Faculty **Signature of the HOD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

M.Tech–I Sem (MR 18-2019-20Admitted Students)
I mid Objective Examination Question Bank

Subject: SGP **Branch /Specialization: EEE**
Subject Code: 70217
Name of the faculty: Dr. K.EZHIL VIGNESH

OBJECTIVE QUESTIONS
MODULE-I

1 1. What is restriking voltage? ( )
The transient voltage that appears across the circuit breaker contacts at the instant of arc extinction.
The transient voltage that appears across the circuit breaker contacts at the end of arc extinction.
Both (A) and (B)
None of above.

2 In a circuit breaker, the active recovery voltage depends upon which among these? ( )
Circuit conditions.
Power factor.
Both (A) and (B)
. None of the above

3 On what factor does the rate of rise of restriking voltage (RRRV) depend on? ( )
System voltage.
Circuit power factor only
Switching conditions
Both (A) and (C).

4 Rate of rise of restriking voltage depend on_____? ( )
Type of circuit breaker.
Capacitance of the system.
Inductance of the system.
Both capacitance and inductance of the system.

5 The stability of arc in vacuum depends on _____. ( )
The contact material only.
The circuit parameters only.
The contact materials and its vapour pressure.
Both (B) and (C)

6 Why is it difficult to interrupt a capacitive circuit? ( )
The current has a leading power factor.
The restriking voltage can be high.
Current magnitude is very small.
Stored energy in the capacitor is very high.

7 Recovery voltage is the value of rms voltage that reappears across the poles of a circuit breaker before_____ ( )
Restriking voltage
Final arc extinction
Rise of voltage
All of the above

8 What is the interrupting medium in the contactor? ( )
Air at atmospheric pressure.
SF_6 gas
Oil
All of the above.

9 How is the restriking voltage measured? ( )
RMS value
Peak value
Instantaneous value
Average value

10 The making and breaking currents of a 3 phase ac circuit breakers in power systems are respectively in what form? ( )
rms value, rms value
instantaneous value, rms value
rms value, instantaneous value
d. instantaneous value, instantaneous value

11 In a short circuit test on a circuit breaker, the following readings were obtained on single frequency transients ( )

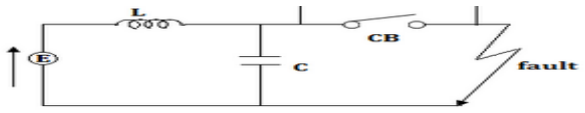
Time to reach the peak re striking voltage - 50μ sec
The peak re striking voltage, 100 kV

What is its average RRRV?
$2*10^6$kV/sec
$3*10^5$kV/sec
$2*10^5$kV/sec
$3*10^6$kV/sec

12 Out of the following circuit breakers, which one has the lowest voltage range ? ( )
Air-break circuit breaker
Tank type oil circuit breaker
Air-blast circuit breaker
SF6 circuit breaker.

13 What is the average rate of rise of restriking voltage upto the first peak? ( )
$525 * 10^3$kV / sec
$453 * 10^3$kV / sec
$582 * 10^3$ kV / sec
$467 * 10^3$ kV / sec

14 A 50 Hz 3 phase synchronous generator has inductance per phase of 15mH. The capacitance of generator and the circuit breaker is 0.002μ F. What is the natural frequency of oscillation? ( )
29 kHz
2.9 kHz
290 kHz
29 MHz

15 

L - C introducing a damping circuit. For the ( )

√(LC)
0.5*√(C/L)
0.5*√(L/C)
2π*√(L/C)

16 Which of the following circuit breaker can be installed on 400 kV line ( )
Tank type oil circuit breaker
Miniature circuit breaker
Vacuum circuit breaker
Air blast circuit breaker

17 A three phase circuit breaker is rated 2000 MVA, 33 kV. What will be its making current? ( )
35 kA
49 kA
70 kA
89 kA

18 The isolators used in the transmission lines are capable of breaking ( )
Fault current
No current
.harging current
Load current

19 For which among the following the current ratings are not required? ( )

Circuit breakers
Relays
Isolators
Load break switch

20 What is the making to breaking current ratio for an extra high voltage circuit breaker? ( )
More than 1
Equal to 1
Less than 1
A negative value

21 The breaking capacity of a three phase circuit breaker is given by ( )
Service line voltage * rated symmetrical current in amperes * 10^{-6} MVA
$\sqrt{3}$ * Service line voltage * rated symmetrical current in amperes * 10^{-6} MVA
1.1* Service line voltage * rated symmetrical current in amperes * 10^{-6} MVA
$\sqrt{2}$ * Service line voltage * rated symmetrical current in amperes * 10^{-6} MVA

22 What is the making capacity of the circuit breaker? ( )
Less than the asymmetrical breaking capacity of the breaker
Greater than the asymmetrical breaking capacity of the breaker
Equal to the asymmetrical breaking capacity of the breaker
Equal to the symmetrical breaking capacity of the breaker

23 What is / are the main disadvantage / s of using oil as the quenching medium in the circuit breakers? ( )
Need periodical replacement.
Risk of formation of explosive mixture with air.
Possibility of causing fire hazards.
All of the above.

24 The heat produced at the contact point owing to flow of electric current is least affected by_____. ( )
Temperature of the surrounding medium.
Contact resistance.
Magnitude of electric current flowing.
d. Duration of flow of current.

25 Which of the following should have low value for the contacts and their material? ( )
Thermal capacity.
Contact resistance.
Thermal conductivity.
None of above.

26 A circuit breaker is ( )

power factor correcting device

a device to neutralize the effect of transients

a waveform correcting device

a current interrupting device

27 Low voltage circuit breakers have rated voltage of less than ( )
220V
400V
1000V
10,000V

28 The fault clearing time of a circuit breaker is usually ( )

few minitues
few seconds
C) one second
D) few cycles of supply voltage

29 The medium employed for extinction of arc in air circuit breaker is ( )

SF6
OIL
AIR
WATER

30 Interrupting medium in a contactor may be ( )
SF6 GAS
OIL
AIR
Any of the above

31 In air blast circuit breakers, the pressure of air is of the order of ( )
100 mm Hg
1 kg/cm2
20 to 30 kg/cm2
200 to 300 kg/cm2

32 SF6 gas ( )
is yellow in color
has pungent odor
is highly toxic
is non-inflammable

33 The pressure of SF6 gas in circuit breakers is of the order of ( )
100 mm Hg
1 kg/cm2
3 to 5 kg/cm2
30 to 50 kg/cm2

34 Which of the following circuit breakers does not use pneumatic operating mechanism ( )
Air blast circuit breaker
SF6 blast circuit breaker
Air break circuit breaker
Bulk-oil circuit breaker.

35 The contact resistance of a circuit breaker is. of the order of ( )
20 micro ohms ± 10
20milli ohms ± 10
20 ohms ± 10
200 ohms ± 10.

36 If a circuit breaker does not operate on electrical compound, the probable reason could be ( )
spring defective
trip circuit open
trip latch defective
any of the above.

37 The normal frequency rms voltage that appears across the breaker poles after final arc extinction has occurred, is ( )
recovery voltage
re striking voltage
supply voltage
peak voltage

38 The circuit breaker is placed in a power system …..... ( )
To interrupt the voltage flow in system
To reduce the reactive power in system
To interrupt the current flow system
To interrupt the active power flow in system

39 If the arc in the circuit breaker is absent during the opening of circuit contacts …… ( )
A high current will flow in the circuit
High temperature in the circuit breaker cabinet damages the breaker enclosure
A high switch over voltage will flow in the circuit
High reactive power flows in the circuit

40 Which of the following circuit breaker should not be used in high voltage power systems? ( )

Minimum oil circuit breaker
air blast circuit breaker
SF6 circuit breaker
Oil circuit breaker

41 The air circuit breaker can be used up to the voltage level of ……. KV ( )
11
21
15
6.6

42 The voltage that presents at breaking contact at the instant of arc extinction is called as ……. ( )
Active recovery voltage
Restricting voltage
Arc voltage
Recovery voltage

43 Low resistance method of arc interruption is applicable for only …… ( )
DC circuits
AC circuits with low voltage
DC circuits with low voltage
AC circuits

44 Which of the following circuit breakers are used for extra high voltage power systems? ( )
A) Air circuit breakers
B) Oil circuit breakers
C) SF6 circuit breakers
D) Bulk oil circuit breakers

45 Which of the SF6 property specifies that it has high arc quenching medium? ( )
Electropositivity
Electronegativity
High thermal conductivity
High density

46 Best protection is provided by HRC fuses in case of ( )
Open circuits
Short circuits
Overloads
None of the above.

47 Fuse protection is used for current ratings up to ( )
10A
20A
50A
100A

48 The acting contacts for a circuit breakers are made of ( )
Stainless steel
Hard pressed carbon
Porcelain
Copper tungsten alloy.

49 Ionization in a circuit breaker is not facilitated by ( )
high temperature of surrounding medium
material of contacts
increase of field strength
increase of mean free path.

50 Which circuit breaker is generally used in railway traction ? ( )
SF6 gas circuit breaker
Air break circuit breaker
Vacuum circuit breaker
Minimum oil circuit breaker

MODULE-II

51 What is the purpose of back up protection? ( )
To increase the speed
To increase the reach
To leave no blind spot
To guard against failure of primary

52 What is the actuating quantity for the relays? ( )
Magnitude
Frequency
Phase angle
All of these

53 Protective relays can be designed to respond to _____ ( )
Light intensity, impedance
Temperature, resistance, reactance
Voltage and current
All of these

54 On what factor does the operating speed of the relay depend upon? ( )
Rate of flux built up
Armature core air gap
Spring tension
All of these

55 Plug setting of a electromagnetic relay can be altered by varying ( )
Number of ampere turns
Air gap of magnetic path
Adjustable back stop
None of these

56 The most efficient torque producing actuating structure for the induction type relays is ( )
Shaded pole structure
Watt hour meter structure
Induction cup structure
Single induction loop structure

57 What do protective relays provide? ( )
Provide additional safety to the circuit breaker in its operation.
Close the contacts when the actuating quantity attains a certain predetermined value.
Limit the arcing current during the circuit breaker operation.
Earth or ground any stray voltage.

58 In an impedance relay, fault current is maximum if fault occurs near the ( )
Relay
Center of the line
Transformer
None of these

59 More faults occur in ( )
Generators
Under ground cables
Transformers
Over head lines

60 Actual tripping of a static relay is obtained by ( )
SCR
Thyristors
UJT
None of these

61 Instantaneous relay is ( )
Hinged armature type
Polarized type
Balanced beam type
All of these

62 .me classification of relays includes ( )

Instantaneous relays
Definite time lag
Inverse time lag
All of these

63 Directional relays responds to ( )
Power
Voltage
Current
Reactance

64 Single phase preventers are used for ( )
Transmission lines
Transformers
Motors
Underground cables

65 In carrier current protection, wave trap is used is for trapping ( )
High frequency waves entering in generating units
Power frequency waves
Low frequency waves
None of these

66 Operating current in relay is ( )
A.c. only
D.c. only
Both (a) and (b)
None of these

67 For phase fault on long line, which relay is used? ( )
MHO relays
Reactance relays
Impedance relays
All of these

68 For motor protection, which relay is used? ( )
Thermocouple type relays
Bimetallic relays
Electronic relays
All of these

69 For protection against synchronizing power surges, which relay is used? ( )
Split-phase relays
Impedance relays
Reactance relays
MHO relays

70. Pilot wire protection is for ( )
Overhead lines
Transformer
Motors
Cables

71 Under voltage relays are used for ( )
Motors
Alternators
Bus bars
All of these

72 An impedance relay is used for ( )
Earth faults
Interphase faults
Both (a) and (b)
None of these

73 Relay gets its operating energy from ( )
Transformer
Alternator

Overhead lines
C.T., P.T.

74 Good relay should possess ( )
Speed & reliability
sensitivity
Adequateness & selectivity
All of these

75 Earthing transformer is used to ( )
Improve neutral wire's current capacity
Avoid overheating of transformer
Provide artificial earthing
Avoid harmonics

76 Percentage differential protection is used to prevent against ( )
Inter-turn faults
Heavy Loads
External Faults
Magnetizing current

77 Back up protection is needed for ( )
Over voltage
Short circuits
Over current
All of these

78 An instantaneous relay is ( )
Permanent moving magnet
Induction cup
Shaded pole
Moving coil

79 Relays for transmission line protection are ( )
In three zones
In two zones
Independent of zone
None of these

80 Induction cup relays responds to ( )
Current
Power
Voltage
Impedance

81 Split-phase relay responds to ( )
Over load faults
Over voltage
Inter turn faults
All of these

82 A single phasing relay can be used with ( )
1Φ motor
2 Φmotor
3Φ motor
All of these

83 A relay is used to ( )
Break the fault current
Sense the fault
Sense the fault and direct to trip the circuit breaker
All of these

84 In impedance relay, current element torque should be ( )
Equal to voltage element torque
Greater than voltage element torque
Less than voltage element torque
None of these

85 Over current fault is most likely in ( )
Transformer
Overhead line equipment
Alternator
Motors

86 Plug setting of a relay can be changed by changing ( )
Air gap
Back up stop
Number of ampere turns
All of these

87 Distance relays are generally ( )
Impedance type
MHO type
Reactance type
All of these

88 Buchholz relay is used to protect against ( )
Inter-turn fault
External faults
Rotor faults
Every internal faults

89 Instantaneous relay should operate within ( )
0.0001 sec
0.001 sec
0.01 sec
0.1 sec

90 MHO relay is inherently a ( )
Directional type
Non-directional type
Unidirectional type
None of these

91 Basic relay connection requirement is that the relay must operate for ( )
Load
Internal faults
Both (a) and (b)
None of these

92 The most efficient torque producing actuating structure for the induction type relays is ( )
Shaded pole structure
Watt hour meter structure
Induction cup structure
Single induction loop structure

93 Plug setting of a electromagnetic relay can be altered by varying ( )
Number of ampere turns
Air gap of magnetic path
Adjustable back stop
None of these

94. On what factor does the operating speed of the relay depend? ( )
Rate of flux built up
Armature core air gap
Spring tension
All of these

95. Protective relays can be designed to respond to _____. ( )
Light intensity, impedance
Temperature, resistance, reactance
Voltage and current
All of these

96 What is the actuating quantity for the relays? ( )
Magnitude

Frequency
Phase angle
All of these

97 What does protective relay provide? ( )
Provide additional safety to the circuit breaker in its operation.
Close the contacts when the actuating quantity attains a certain predetermined value.
Limit the arcing current during the circuit breaker operation.
Earth or ground any stray voltage.

98 Electro-magnetic relays may be operated by ( )
electro-magnetic attraction
electro-magnetic induction
thermal effect
any of the above.

99 Which of the following is not a relay using electromagnetic force ( )
Buchholz relay
Induction cup relay
Balanced beam relay
Attracted armature type relay.

100 Buchholz relay is operated by ( )
Eddy currents
Gas pressure
Electro-magnetic induction
Electro-static induction.

MODULE-III

101 In large generators protection provided against external faults is ( )

a.biased differential protection
b. sensitive earth fault protection
c. inter-turn fault protection

d. all of the above.

102 Which of the following part plays important role in over speed protection of a generator ? ( )

a.Over current relay

b. Alarm

c. Differential protection

d. Governor.

103 Which type of protection is provided on a generator to protect against stator insulation failure ? ( )

a.Differential protection

b. Thermocouple actuated alarm
c. Over current relay

d. Reverse power relay.

104 Which relays comes into operation in the event of the failure of prime mover connected to the generator ? ( )

a.Reverse power relay

b. Differential relay

c. Buchholz relay
d. None of the above.

105 Salient pole type rotors as compared to cylindrical pole type are ( )

a. smaller in diameter and larger in axial length

b. larger in diameter and smaller in axial length
c. larger in diameter as well as axial length

d. small in diameter as well as axial length.

106 Relay gets its operating energy from ( )
a. Transformer
b. Alternator
c. Overhead lines
d. C.T., P.T.

107 Percentage differential protection is used to prevent against ( )
a. Inter-turn faults
b. Heavy Loads
c. External Faults
d. Magnetizing current

108 Back up protection is needed for ( )
a. Over voltage
b. Short circuits
c. Over current
d. All of these

109 Split-phase relay responds to ( )
a. Over load faults
b. Over voltage
c. Inter turn faults
d. All of these

110 What is the purpose of back up protection? ( )
a. To increase the speed

b. To increase the reach
c. To leave no blind spot
d. To guard against failure of primary

111 What is the actuating quantity for the relays? ( )
a. Magnitude
b. Frequency
c. Phase angle
d. All of these

112 Minimum faults occur in which of the following power system equipment? ( )
a. Transformer
b. Switch gear
c. CT, PT
d. Alternator

113 Large internal faults below oil level are protected by ( )
a. Mho and ohm relays
b. Horn gap and temperature relay
c. Merz Price percentage differential relay
d. Earth fault and positive sequence relay

114 When a line-to-line fault occurs, the short circuit current of an alternator depends upon its ( )
a. Sub transient reactance
b. Transient reactance
c. Synchronous reactance
d. Short circuit reactance

115 Neutral can be grounded by ( )
a. Solid grounding
b. Resistance grounding
c. Reactance grounding

d. All of these

116 In carrier current protection, wave trap is used is for trapping ( )
a. High frequency waves entering in generating units
b. Power frequency waves
c. Both (a) and (b)
d. None of these

117 For protection against synchronizing power surges, which relay is used? ( )
a. Split-phase relays
b. Impedance relays
c. Reactance relays
d. MHO relays

118 Under voltage relays are used for ( )
a. Motors
b. Alternators
c. Bus bars
d. All of these

119 A thermal protection switch can protect against ( )
a. short-circuit
b. temperature
c. overload
d. over voltage

120 Thermal circuit breaker has ( )
a. delayed trip action
b. instantaneous trip action
c. both of the above
d. none of the above

121 Thermal overload relays are used to protect the motor against over current due to ( )
a. short-circuits
b. heavy loads
c. grounds
d. all of the above

122 A differential relay measures the vector difference between ( )
a. two currents
b. two voltages
c. two or more similar electrical quantities
d. none of the above

123 A transmission line is protected by ( )
a. inrush protection
b. distance protection
c. time graded and current graded over current protection
d. both (b) and (c)

124 Protective relays are devices that detect abnormal conditions in electrical circuits by measuring ( )
a. current during abnormal condition
b. voltage during abnormal condition
c. constantly the electrical quantities which differ during normal and abnormal conditions
d. none of the above

125 The short circuit in any winding of the transformer is the result of ( )
a. impulse voltage
b. insulation failure
c. loose connection
d. mechanical vibration

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