**Section : Discipline**

1. For a synchronous motor, the nature of speed-torque characteristic if torque is on Y axis and speed is on X axis is a:

A. straight line parallel to Y axis

B. straight line at 45 degree angle from X axis

C. a parabolic line between two axis

D. straight line parallel to X axis

Ans. D

2. Silver metal is a \_\_\_\_\_\_\_ of electricity.

A. good conductor

B. superconductor

C. semiconductor

D. bad conductor

Ans. A

3. The definition of demand factor is:

A. total connected load / maximum demand

B. maximum demand / total connected load

C. maximum demand + total connected load

D. maximum demand – total connected load

Ans. B

4. The definition of synchronous reactance is:

A. reactance either due to armature reaction or leakage flux

B. reactance due to armature reaction of the machine

C. reactance due to leakage flux

D. combined reactance due to leakage flux and armature reaction

Ans. D

5. In IP Class-A addresses, the \_\_\_\_\_\_\_\_\_ byte is reserved for network ids.

A. fourth

B. second

C. third

D. first

Ans. D

6. Which of following logic gates provides output as 0 when both inputs are same (either 0 or 1)?

A. XNOR

B. XOR

C. NOR

D. NAND

Ans. B

7. In a three-phase induction motor, if the air gap is increased then its:

A. power factor will reduce

B. efficiency will improve

C. speed will reduce

D. breakdown torque will reduce

Ans. A

8. If three inductors are connected in parallel, then which of the following is correct?

A. Power across all the inductors will be same

B. Thermal loss across all the inductors will be same

C. Current across all the inductors will be same

D. Voltage across all the inductors will be same

Ans. D

9. A voltage wave is given by V = 200 sin314t. What is the maximum value?

A. 1600 V

B. 800 V

C. 400 V

D. 200 V

Ans. D

10. At which level of an organisation does a corporate manager operate?

A. Middle level

B. Functional level

C. Operational level

D. Top level

Ans. D

11. Which of the following is a universal logic gate?

A. XNOR

B. NOR

C. XOR

D. OR

Ans. B

12. Light energy radiated per second from a luminous body is known as:

A. luminous flux

B. watt

C. candela

D. lumen

Ans. A

13. A capacitor has a capacitance of 5 microfarad. What is the stored energy in the capacitor, if DC voltage of 100 V is applied across it?

A. 25 joules

B. 25/100 joules

C. 250/100 joules

D. 2.5/100 joules

Ans. D

14. The Ohm’s law is valid for \_\_\_\_\_ circuit/s.

A. linear

B. non-linear and linear

C. non-linear

D. semiconductor

Ans. A

15. Flat compound characteristic of a DC compound generator is obtained by connecting a:

A. variable resistance in parallel with shunt load

B. variable resistance across series field

C. fixed resistance in parallel with shunt load

D. fixed resistance across series field

Ans. B

16. An incoming alternator is to be synchronised with an already operating alternator. Which of the following conditions is NOT necessary to be satisfied?

A. Same frequency

B. Same voltage magnitude

C. Same phase sequence

D. Same prime mover speed

Ans. D

17. Which of the following is equivalent to the Boolean function X + XY?

A. 0

B. Y

C. X

D. 1

Ans. C

18. The coefficient of coupling is a factor used when two coils:

A. are connected with a wire

B. are connected in parallel

C. are mutually coupled in a magnetic circuit

D. of same value are connected with a wire

Ans. C

19. The symbol shown here is:

A picture containing clock

Description automatically generated

A. Voltage controlled current source

B. Current controlled current source

C. Current controlled voltage source

D. Voltage controlled voltage source

Ans. A

20. Which of the following is an example of a sequential circuit?

A. Register

B. Multiplexer

C. Full Adder

D. Decoder

Ans. A

21. How many input lines are there in a ‘Full Adder’?

A. 2

B. 4

C. 1

D. 3

Ans. D

22. The capacitor in circuit opposes the sudden change of:

A. voltage

B. temperature

C. energy

D. current

Ans. A

23. Which device is used to measure phase difference between grid voltage and voltage generated by a synchronous alternator?

A. Synchroscope

B. Voltmeter

C. Wattmeter

D. Power factor meter

Ans. A

24. Which instrument is used to measure the surge voltage on transmission lines caused by lightning?

A. Synchroscope

B. Voltameter

C. Voltmeter

D. Klydonograph

Ans. D

25. The instrument used to determine the RMS value of AC voltage of high magnitude (11 kV) of any waveshape is a/an \_\_\_\_\_\_ instrument.

A. induction

B. electrostatic

C. dynamometer type

D. moving iron

Ans. B

26. Leakage factor in magnetic circuit is defined as:

A. total flux + useful flux

B. total flux × useful flux

C. useful flux / total flux

D. total flux / useful flux

Ans. D

27. What will be the number of cylinders in a hard disk in which each recording surface contains 8 tracks and each track is divided into 16 sectors?

A. 8

B. 128

C. 24

D. 16

Ans. A

28. In forward regeneration mode of a three-phase induction motor drive, the value of slip 's' is:

A. negative

B. 1

C. infinite

D. 0

Ans. A

29. 1 watt is equal to:

A. 1 Newton−meter−second

B. 1 Newton−second/meter

C. 1 Newton/meter−second

D. 1 Newton−meter/second

Ans. D

30. When all the elements in the circuit carry the same current then it is called a/an \_\_\_\_\_\_ circuit.

A. parallel

B. open

C. series

D. thermal

Ans. C

31. Which of the following methods is NOT used for DC drive?

A. Armature current

B. Field current

C. Thermal control

D. Armature voltage

Ans. C

32. Single phase to ground fault is a/an \_\_\_\_\_\_ fault.

A. unsymmetrical

B. disaster

C. thermal

D. symmetrical

Ans. A

33. In source transformation of a circuit:

A. voltage source is transformed in current source

B. inductor is transformed in voltage source

C. capacitor is transformed in resistor

D. inductor is transformed in capacitor

Ans. A

34. What will be the effect on hysteresis loss of transformer, if the iron core is replaced by air core?

A. Remains unchanged

B. Increases 5 times

C. Reduces to zero

D. Increases to infinite

Ans. C

35. Cable impregnation means application of \_\_\_\_\_\_ compound on the paper used in cables.

A. non-insulating oil

B. insulating oil

C. insulating metal

D. non-insulating metal

Ans. B

36. The speed of operation of a diode is decided by the:

A. duty cycle

B. applied voltage across its terminal

C. reverse recovery time

D. frequency of operation

Ans. C

37. Which of the following is NOT a valid keyword in ‘C’ language?

A. auto

B. long

C. big

D. typedef

Ans. C

38. Which of the following is NOT an AC drive?

A. Induction motor drive

B. Compound motor drive

C. Synchronous motor drive

D. Stepper motor drive

Ans. B

39. A phase difference of 30 degree between input and output corresponding line voltages of three-phase transformer connection is to be obtained. The connection to be made is:

A. Delta-Zigzag

B. Delta-Delta

C. Star-Star

D. Star-Delta

Ans. D

40. Which of the following cores are used for construction of large power transformers?

A. Cold rolled grain oriented steel

B. Hot rolled steel

C. Ferrite

D. Cold rolled non-grain oriented steel

Ans. A

41. Which of the following pairs is an active transducer?

A. Solar cell – LVDT

B. Thermocouple – thermistor

C. Thermistor – solar cell

D. Thermocouple – solar cell

Ans. D

42. What is the decimal equivalent of the hexadecimal number (2F)16?

A. 47

B. 572

C. 527

D. 74

Ans. A

43. Which of the following torque is NOT present in a three-phase induction motor?

A. Parasitic torque

B. Pull up torque

C. Starting torque

D. Thermal torque

Ans. D

44. Which of the following is a branching construct in ‘C’ language?

A. if-else statement

B. for statement

C. do-while statement

D. while statement

Ans. A

45. Which of the following is NOT essential for working of an indicating instrument?

A. Controlling torque

B. Deflecting torque

C. Damping torque

D. Braking torque

Ans. D

46. What will be the maximum number of addressable locations in a memory using 9 address lines?

A. 511

B. 512

C. 128

D. 256

Ans. B

47. Kirchhoff’s current law is a consequence of the law of conservation of:

A. energy

B. heat

C. motion

D. gravity

Ans. A

48. The torque of a three-phase induction motor is \_\_\_\_\_\_ the supply voltage.

A. inversely proportional to the square of

B. directly proportional to

C. inversely proportional to

D. directly proportional to the square of

Ans. D

49. The property of a substance that opposes the flow of electric current is known as:

A. resilience

B. conductance

C. resistance

D. immittance

Ans. C

50. In an AC circuit containing pure inductance, the voltage applied is 110 V, 50 Hz, while the current is 10 A. The value of inductance is:

A. 30 mH

B. 3.5 mH

C. 3.0 mH

D. 35 mH

Ans. D

51. In common collector amplifier, the voltage gain:

A. is constant

B. varies with input voltage

C. is less than 1

D. varies with load impedance

Ans. C

52. What is the value of current drawn by a 220 V DC motor of armature resistance 0.5 ohm and back emf 200 V?

A. 40 A

B. 400 A

C. 44 A

D. 440 A

Ans. A

53. Let 312 as a number in the base-B number system, where B is unknown. If (312)B = (54)10, then what is the value of the base B?

A. 6

B. 5

C. 4

D. 12

Ans. C

54. In the V curves of a synchronous motor, what are the quantities on X axis and Y axis respectively?

A. Armature current and torque

B. Torque and field current

C. Power factor and field current

D. Armature current and field current

Ans. D

55. The flux in the magnetic circuit is equivalent to the \_\_\_\_\_\_ the electric circuit.

A. voltage in

B. heat in

C. current in

D. impedance of

Ans. C

56. The first version of Windows NT was:

A. Windows XP

B. Windows NT 3.1

C. Windows 2000

D. Windows NT 3.0

Ans. B

57. Photovoltaic cells are \_\_\_\_\_\_ materials.

A. superconductor

B. conductor

C. semiconductor

D. bad conductor

Ans. C

58. Which of the following is NOT an essential quality of protection?

A. Cost control

B. Fast operation

C. Reliability

D. Stability

Ans. A

59. In parallel magnetic circuit, the total ampere turn is equal to the:

A. ampere turn of only one smallest part

B. ampere turn of only one longest part

C. difference of ampere – turn of each path

D. sum of amper – turn of each path

Ans. D

60. The first two bits of the first octet of an IP Class-B address are always:

A. 1

B. 11

C. 10

D. 0

Ans. C

61. What is the average value of voltage extracted from a battery?

A. Same as maximum value

B. Divide maximum value by √2

C. Multiply maximum value by √1

D. Zero

Ans. A

62. An IPv4 address is a \_\_\_\_\_\_\_\_\_\_ address, which is categorised into different IP classes.

A. 256 bits

B. 128 bits

C. 16 bits

D. 32 bits

Ans. D

63. NTFS stands for \_\_\_\_\_\_\_\_\_\_ and it was developed by \_\_\_\_\_\_\_\_.

A. New Technology File System; Apple

B. Network Technology File System; Apple

C. New Technology File System; Microsoft

D. Network Technology File System; Intel

Ans. C

64. For a three-phase induction motor drive, which of the following technique is NOT used?

A. Frequency control

B. Stator voltage control

C. Rotor voltage control

D. Moisture control

Ans. D

65. Assembly language uses abbreviated English words like ADD, JUMP, MUL, etc. These words are called:

A. mnemonics

B. thesaurus

C. pseudo codes

D. symbols

Ans. A

66. Which of the following is the most preferred language for scientific computations?

A. FORTRAN

B. COBOL

C. Java

D. Pascal

Ans. A

67. Determine the frequency of the periodic waveform shown here.

Chart

Description automatically generated

A. 20 Hz

B. 200 Hz

C. 10 Hz

D. 50 Hz

Ans. C

68. What is the ‘base’ of the hexadecimal number system?

A. 16

B. 8

C. 2

D. 10

Ans. A

69. Which of the following acts as a temporary storage location to hold an intermediate result in mathematical and logical calculations?

A. RAM

B. Accumulator

C. Program Counter

D. Memory Address Register (MAR)

Ans. B

70. Load duration curve is the plot between:

A. load and time

B. load and frequency

C. load and temperature

D. load and voltage

Ans. A

**Section : General Knowledge**

1. Margazhi Festival of Dance and Music was first celebrated in order to rejoice the first

anniversary of which of the following?

A. Narada Gana Sabha

B. Kalakshetra

C. Krishna Gana Sabha

D. Madras Music Academy

Ans. D

2. Which of the following countries does NOT have a coastline on the Bay of Bengal?

A. Bangladesh

B. Myanmar

C. Bhutan

D. Sri Lanka

Ans. C

3. Yomari Punhi is a harvest festival celebrated in which of the following countries?

A. Nepal

B. Myanmar

C. Bangladesh

D. Bhutan

Ans. A

4. As on November 2019, who is the Cabinet Minister of Commerce and Industry?

A. Nitin Gadkari

B. Piyush Goyal

C. Raj Nath Singh

D. Narendra Singh Tomar

Ans. A

5. Which king of the Pushyabhuti dynasty was also known as Sakalottarapathanatha?

A. Harshavardhana

B. Naravardhana

C. Rajyavardhana

D. Grahavarman

Ans. A

6. Which among the following is the longest river of Sri Lanka?

A. Kala Oya

B. Mahaweli

C. Kelani

D. Malvathu

Ans. B

7. In which year was the State of Nagaland formally inaugurated as the 16th State of the Indian Union?

A. 1947

B. 1965

C. 1950

D. 1963

Ans. D

8. According to Organisation for Economic Co-operation and Development (OECD), an

investment of \_\_\_\_\_\_ percent or above from overseas is considered as FDI.

A. 20

B. 5

C. 10

D. 15

Ans. C

9. A member of a Public Service Commission shall hold office for a term of how many years?

A. Four

B. Five

C. Three

D. Six

Ans. D

10. Who among the following is the first Chinese man to win an Olympic gold medal in

swimming?

A. Sun Yang

B. Xu Jiayu

C. Ning Zetao

D. Wang Shun

Ans. A

**Section : Reasoning**

1. Select the number that will replace the question mark (?) in the following series.

4, 11, 19, 41, 79, ?, 319

A. 161

B. 261

C. 141

D. 281

Ans. A

2. In 25 minutes, the minute hand gains over the hour hand by:

A. 137.5 degrees

B. 173. 5 degrees

C. 157.3 degrees

D. 175.3 degrees

Ans. A

3. How many pairs of letters in the word 'LOGICS' have as many letters between them in the word as in the alphabet?

A. 2

B. 4

C. 3

D. 1

Ans. A

4. Select the number that will come next in the following series.

23, 29, 31, 37, 41, 43, 47,?

A. 49

B. 51

C. 53

D. 59

Ans. C

5. Eight Teachers Pavan, Kaleem, Ravi, Somu, Tiwari, Vihan, Jagan and Mohan are sitting in a circle facing the centre. Tiwari is 2nd to the right of Ravi who is 3rd to the right of Pavan. Somu is 2nd to the left of Pavan and 4th to the right of Kaleem. Mohan is 3rd to the right of Vihan who is NOT an immediate neighbour of Pavan. Who is second to the right of Tiwari?

A. Ravi

B. Kaleem

C. Pavan

D. Mohan

Ans. D

6. In WHM Boy's hostel, breakfast is served at 7 a.m. and dinner is served twelve and a half hours after that. At what time is dinner served?

A. 20:30 hours

B. 18:30 hours

C. 19:30 hours

D. 21:30 hours

Ans. C

7. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

**Statements:**

All Books are Pens.

All Pens are Erasers.

All Erasers are Files.

**Conclusions :**

I. All Pens are Files.

II. All Pens are Books.

III. All Files are Books.

IV. All Files are Pens.

A. Neither conclusions I nor II follows

B. Both conclusions II and IV follow

C. Only conclusion III follows

D. Only conclusion I follows

Ans. D

8. Select the letter that will come next in the following series.

J, L, P, V, D, N,?

A. Y

B. X

C. Z

D. W

Ans. C

9. Five school students were administered psychological tests to know their intellectual levels. In the report, the psychologist pointed out that Aravind is less intelligent than Bidan. Chandan is less intelligent than Dileep. Bidan is less intelligent than Chandan and Aravind is more intelligent than Mohan. Which child is the most intelligent?

A. Bidan

B. Chandan

C. Dileep

D. Aravind

Ans. C

10. Study the given information carefully and answer the question that follows.

‘K $ D’ means ‘K is father of D’.

‘K < D’ means ‘K is wife of D’.

‘K > D’ means ‘K is daughter of D’.

‘K @ D’ means ‘K is son of D’.

How is H related to N in the expression

H > R $ S@T > N?

A. Niece

B. Granddaughter

C. Daughter-in-law

D. Daughter

Ans. B

**Section : General English**

1. Select the most appropriate SYNONYM of the given word.

CONTEMPT

A. Respect

B. Affection

C. Esteem

D. Hatred

Ans. D

2. Select the most appropriate option to fill in the blank.

People are getting fed up \_\_\_\_\_\_.

A. with his abiding complaints

B. with his trending complaints

C. as his constant complaints

D. with his constant complaints

Ans. D

3. Select the most appropriate meaning of the underlined idiom.

My brother is always seen in the company of artists, birds of the same feather flock

together.

A. People with similar interests hangout together.

B. Birds of the same species fly together

C. People with similar interest do not like each other

D. All birds have similar structure

Ans. A

4. Select the most appropriate ANTONYM of the given word.

PERSIST

A. Endure

B. Cease

C. Continue

D. Multiply

Ans. B

5. Select the correctly spelt word.

A. Coloquial

B. Colooqial

C. Colloquil

D. Colloquial

Ans. D

6. Select the grammatically correct sentence from the given options.

A. The jury the accused found person guilty.

B. The jury found the accused person guilt.

C. The jury found the person guilty accused.

D. The jury found the accused person guilty.

Ans. D

7. Select the most appropriate preposition to fill in the blank.

My younger son is very sensitive, he has taken \_\_\_\_\_\_ his mother.

A. on

B. after

C. by

D. from

Ans. B

8. Select the most appropriate articles to fill in the blanks.

\_\_\_\_\_\_ comedian announced that in his next performance he would demonstrate \_\_\_\_\_\_ new trick.

A. The; a

B. A; an

C. An; the

D. An; a

Ans. A

9. Select the option that can be used as a one-word substitute for the given group of words.

A man with feminine qualities \_\_\_\_\_\_.

A. Feminine

B. Effeminate

C. Canine

D. Masculine

Ans. B

10. Select the most appropriate conjunction to fill in the blank.

My younger son is very sensitive, he has taken \_\_\_\_\_\_ his mother.

A. and

B. whereas

C. so

D. nevertheless

Ans. D