**Section : Discipline**

1. Which of the following type of DC generator is most suitable as booster?

A. Series generator

B. Shunt generator

C. Compound generator

D. Separately excited generator

Ans. A

2. A magnetising force of 800 AT/m will produce a flux density of \_\_\_\_\_\_ in air.

A. 1 Wb/m2

B. 1 mWb/m2

C. 10 mWb/m2

D. 0.5 Wb/m2

Ans. B

3. The function of steel wire in ACSR conductor is to:

A. compensation for skin effect

B. reduce inductance

C. take care of surges

D. provide additional mechanical strength

Ans. D

4. Buccholz relay is essential for protection against transformer’s \_\_\_\_\_\_.

A. inner-turn fault

B. HT and LT fault

C. earth-fault

D. series fault

Ans. A

5. The direction of rotation of a DC motor can be determined by:

A. Ampere’s law

B. Fleming’s left hand rule

C. Fleming’s right hand rule

D. Lenz’s law

Ans. B

6. Merz price protection scheme is the one from:

A. differential protection

B. over current protection

C. earth fault protection

D. distance protection

Ans. A

7. The damping torque in a moving coil instrument is caused by:

A. eddy current

B. gravity friction

C. fluid friction

D. copper losses

Ans. A

8. The cross-sectional area of conductor for house wiring is usually expressed as:

A. hz

B. mm

C. mm2

D. cm

Ans. C

9. Trash rack, forebay, surge tank, spill way are the terms involved with:

A. nuclear power plant

B. thermal power plant

C. wind turbine based power plant

D. hydroelectric power plant

Ans. D

10. In which of the following looping constructs of the ‘C’ language, the body of the loop is executed at least once?

A. while construct

B. for construct

C. Both ‘for’ and ‘while’ constructs

D. do-while construct

Ans. D

11. In IP Class-C addresses, the three higher order bits of the first octet are set to:

A. 010

B. 101

C. 110

D. 100

Ans. C

12. Which of the following options is true for the given circuit?

Diagram, schematic

Description automatically generated

A. I1 = –2I2

B. I2 > I1

C. I1 = 2I2

D. No current in the loop

Ans. D

13. An over excited synchronous motor at no load acts as:

A. capacitor

B. inductor

C. transformer

D. resistor

Ans. A

14. The World Wide Web was invented by:

A. Larry Page

B. Bill Gates

C. Tim Berners-Lee

D. Donald Knuth

Ans. C

15. Magnetising impedance of a transformer is determined by:

A. other than these tests

B. open circuit test

C. short circuit test

D. both open circuit and short circuit test

Ans. B

16. Fuse wire is connected:

A. in series with neutral wire

B. in series with phase wire

C. in parallel with phase wire

D. in parallel with neutral wire

Ans. B

17. The D-type flip-flop is a modified SR flip-flop with the addition of an inverter. What does the letter ‘D’ mean?

A. Delay

B. Detect

C. Distributed

D. Diverted

Ans. A

18. The following difficulty of radial system can be overcome by ring system.

A. Higher length of the conductor

B. Voltage is affected much at far away load from the substation

C. Feeder is connected to the supply from both end

D. High cost of the radial system

Ans. B

19. The current in the inductive circuit is 10 A and power factor is 0.866. The phasor

representation of current is:

A. 10 < – 30°

B. 10 < 30°

C. 10 < 0.866

D. 5 < – 30°

Ans. A

20. Voltage regulation due to Ferranti effect may be:

A. All of the other options

B. negative

C. zero

D. positive

Ans. B

21. The condition for maximum efficiency of a transformer is that:

A. core losses are zero

B. copper losses are zero

C. copper losses are twice the core losses

D. copper losses are equal to iron losses

Ans. D

22. If the current through a coil having an inductance of 0.5 H is reduced from 5 A to 2 A in 0.05s, calculate the mean value of the EMF induced in the coil.

A. –15 V

B. –30 V

C. –60 V

D. –10 V

Ans. B

23. A megger is an instrument that gives the reading in:

A. volt

B. ohm

C. henry

D. ampere

Ans. B

24. Which of the following is a client-server protocol for transmitting files between computers on the Internet over TCP/IP connections?

A. HTTPS

B. HTTP

C. FTP

D. SMTP

Ans. C

25. A 3 phase induction motor runs at almost 1000 rpm at no load and 950 rpm at full load when supplied with power from a 50 Hz 3 phase line. The frequency of rotor voltage is:

A. 2 Hz

B. 2.5 Hz

C. 250 Hz

D. 2.25 Hz

Ans. B

26. One kilowatt hour of electrical energy is the same as:

A. 36 × 105 watt

B. 36 × 105 ergs

C. 36 × 105 joules

D. 36 × 105 B.T.U.

Ans. C

27. The CRT display is made up of small picture elements called pixels. The \_\_\_\_\_\_ the pixels, the \_\_\_\_\_\_ the image clarity or resolution of the display.

A. smaller, better

B. smaller, poorer

C. larger, better

D. larger, poorer

Ans. A

28. If the flux of a DC motor approaches zero, its speed will:

A. approach infinity

B. approach zero

C. remain unchanged

D. be between zero and infinity

Ans. A

29. In an R-L-C series circuit, at resonance frequency, the voltage across the resistance is:

A. much lower than applied voltage

B. equal to applied voltage

C. function of value of inductance

D. much higher than applied voltage

Ans. B

30. The generation of hydroelectric power does not depend on:

A. specific weight of the water

B. rate of the flow of water

C. height of water head

D. efficiency of the evaporator

Ans. D

31. Which of the following CPU registers contains the address of the next instruction to be fetched from the main memory when the previous instruction has been successfully completed?

A. MDR

B. MAR

C. Accumulator

D. Program Counter (PC)

Ans. D

32. How many different symbols (digits/characters) are used in a base-N number system?

A. N – 2

B. N

C. N – 1

D. N + 1

Ans. B

33. A generation station has average demand and maximum demand of 48000 kW and 96000 kW respectively. If the plant capacity factor is 0.48, the installed capacity will be:

A. 200000 kW

B. 250000 kW

C. 200000 kWh

D. 100000 kW

Ans. D

34. The net electromotive force around a closed circuit loop is equal to the sum of potential drops around the loop. This law is called as:

A. Kirchhoff’s second law

B. Lenz’s law

C. Kirchhoff’s first law

D. Fleming’s left hand rule

Ans. A

35. Which of the following editions of the Windows 7 operating system does NOT have the Aero Glass graphical user interface?

A. Enterprise

B. Professional

C. Starter

D. Home Premium

Ans. C

36. Which of the following logic gates can be used to implement the functionality of any logic gate?

A. XOR

B. XNOR

C. NAND

D. AND

Ans. C

37. The three resistances of 3 Ω each are connected in delta. Their value in each branch of equivalent star connection will be:

A. 6 Ω

B. 1 Ω

C. 9 Ω

D. 3 Ω

Ans. B

38. The ratio of the sum of the individual maximum demands to the maximum demand of the whole system under consideration is called as:

A. load factor

B. demand factor

C. diversity factor

D. power factor

Ans. C

39. Which of the following is equivalent to the Boolean function X’(X’+Y)?

A. X

B. Y’

C. Y

D. X’

Ans. D

40. The deflecting torque in analog measurement device is:

A. proportional to the resistance of the coil

B. proportional to the current through the coil

C. inversely proportional to flux density

D. inversely proportional to the current through the coil

Ans. B

41. A group of related web pages form a:

A. proxy server

B. web server

C. website

D. home page

Ans. C

42. A Mho relay is a:

A. voltage controlled directional relay

B. directional restrained over current relay

C. voltage controlled over current relay

D. directional restrained over voltage relay

Ans. A

43. A resistance, an inductance and a capacitance are connected in series. The values of R, XL and XC are 20 Ω, 30 Ω and 10 Ω respectively. The net reactance of the circuit is:

A. 20 Ω

B. 10 Ω

C. 78.28 Ω

D. zero

Ans. A

44. Which of the following is a valid identifier name as per the naming rules of the ‘C’ language?

A. 45 USD

B. Final-Examination

C. Reminder 4

D. 45 Percent

Ans. C

45. Which of the following logic gates provides output as 1 when both inputs are different?

A. AND

B. XOR

C. XNOR

D. NOR

Ans. B

46. Two resistors of 40 Ω and 40 Ω are connected in series. A wire of negligible resistance is connected in shunt across the combination. The effective resistance will be:

A. 20 Ω

B. infinity

C. zero

D. 80 Ω

Ans. C

47. Energy meter is a/an:

A. integrating instrument

B. recording instrument

C. absolute instrument

D. indicating instrument

Ans. A

48. It is advisable to start a DC series motor with some load to:

A. avoid sparking

B. limit the speed

C. limit the flux

D. limit the current

Ans. B

49. If a memory has 10 address lines and the size of each addressable location (block) is 4 bytes, then what is the maximum storage capacity of the memory?

A. 4 kilobyte

B. 2 kilobyte

C. 1 kilobyte

D. 3 kilobyte

Ans. A

50. Which of the following property of an algorithm states that the algorithm must terminate after a certain number of steps?

A. Effectiveness

B. Input and output

C. Finiteness

D. Definiteness

Ans. C

51. A galvanometer with a full scale current of 10 mA has a resistance of 1000 Ω. The

multiplying power (the ratio of measured current to galvanometer current) of a 100 Ω shunt with this galvanometer is:

A. 100

B. 11

C. 10

D. 110

Ans. B

52. Which of the following statements related to Boolean algebra is FALSE?

A. 

B. 

C. 

D. 

53. For the same voltage drop, increasing the voltage of a distributor n-times:

A. reduces the cross section of the conductor by n times

B. increases the x-section of the conductor by n-times

C. reduces the cross section of the conductor by n2 times

D. increases the volume of the conductor

Ans. A

54. Shunt reactors are needed:

A. to bring down receiving end voltage under heavy loads

B. to bring down receiving end voltage at light loads

C. to boost receiving end voltage under light load condition

D. to boost receiving end voltage under heavy loads

Ans. B

55. A 1 H pure inductor carrying a current of 3 A will store energy of:

A. 4.5 J

B. 9 J

C. 9 W

D. 4.5 W

Ans. A

56. Which of the following statements related to ‘C’ language is/are FALSE?

(i) Both ‘int’ and ‘unsigned int’ variables can store exactly the same range of values.

(ii) A variable in ‘C’ language cannot be declared as ‘long double’.

A. Both (i) and (ii)

B. Only (i)

C. Only (ii)

D. Neither (i) nor (ii)

Ans. A

57. 1 kVA, 230 kVA, 50 Hz, single phase transformer has an eddy current loss of 30 W. The eddy current loss when the transformer is excited by a DC source of same voltage will be:

A. zero watt

B. more than 30 W

C. 30 W

D. less than 30 W

Ans. A

58. In a power transformer, copper losses occur in:

A. bushing

B. insulating oil

C. core

D. windings

Ans. D

59. An ideal voltage source has:

A. terminal voltage in proportion to load

B. open circuit voltage equal to the voltage on full load

C. zero internal resistance

D. terminal voltage in proportion to current

Ans. C

60. In a capacitor start motor if C1 is the capacitance required for best starting torque and C2 is the capacitance required for best running characteristic then:

A. C1 approximately equal to C2

B. C1 is equal to C2

C. C1 is much smaller than C2

D. C1 is much larger than C2

Ans. D

61. In earthing, salt, charcoal etc. are mixed with soil to:

A. increase the permeability of the soil

B. increase the inductive property of the soil

C. increase the resistivity of the soil

D. decrease the resistivity of the soil

Ans. D

62. A line which connects a distributor to the customer's load point is called:

A. line

B. feeder

C. distributor

D. service main

Ans. D

63. Which of the following is a combinational logic circuit designed to switch one of several input lines to a single common output line?

A. Flip-flop

B. Full adder

C. Multiplexer

D. Demultiplexer

Ans. C

64. A moving coil gives the full scale deflection with 15 mA and has a resistance of 5 Ω. The value of the resistance in parallel to enable the resistance in parallel to enable the instrument to read up to 1 A.

A. 0.00076 Ω

B. 0.076 Ω

C. 1.76 Ω

D. 0.0076 Ω

Ans. B

65. Þ (rho) is called as the:

A. conductivity of the material

B. permeability of the material

C. permeability of the vacuum

D. resistivity of the material

Ans. D

66. The economiser of steam turbine system is located in the:

A. turbine circuit

B. feeding water circuit

C. coal handling plant

D. condenser circuit

Ans. B

67. The AC armature winding of an alternator operates at \_\_\_\_\_ the field winding voltage.

A. much lesser voltage than

B. the same voltage as

C. half the voltage of

D. much higher voltage than

Ans. D

68. Which of the following high-level languages supports the concepts of class and objects?

A. C

B. COBOL

C. FORTRAN

D. C++

Ans. D

69. 3 phase synchronous motor needs:

A. 3 phase AC supply only

B. 3 phase AC supply as well as DC supply

C. 3 phase AC supply as well as single phase AC supply

D. DC supply only

Ans. B

70. A 10 kVA 500/100 V transformer has the resistance referred to primary is 0.3 Ω. The equivalent resistance of transformer referred to secondary is:

A. 0.10 Ω

B. 7.5 Ω

C. 0.012 Ω

D. 0.21 Ω

Ans. C

**Section : General Knowledge**

1. In which year did Assam become a constituent state of India?

A. 1955

B. 1960

C. 1950

D. 1947

Ans. C

2. In which year did the National Payments Corporation of India (NPCI) launch the RuPay Card?

A. 2014

B. 2013

C. 2015

D. 2012

Ans. D

3. President’s Rule has been imposed on Maharashtra in November 2019. This is the \_\_\_\_\_\_ time that Maharashtra has come under the Central Rule.

A. third

B. fifth

C. fourth

D. second

Ans. A

4. In which year did Mizoram attained statehood?

A. 1985

B. 1982

C. 1980

D. 1987

Ans. D

5. Poson Poya festival is a famous festival of which of the following countries?

A. Bhutan

B. Bangladesh

C. Sri Lanka

D. China

Ans. C

6. Article 356 of the Indian Constitution is related to which of the following?

A. Separation of judiciary from executive

B. Right of minorities to establish and administer educational institutions

C. Provisions in case of failure of constitutional machinery in State

D. Remedies for enforcement of fundamental rights

Ans. C

7. In August 2019, Chandrima Shaha has been elected as the first woman president of which among the following?

A. Indian Institute of Science Education and Research

B. National Institute of Immunology

C. Indian Institute of Science

D. Indian National Science Academy (INSA)

Ans. D

8. In which year did Rajyavardhan Singh Rathore win an Olympic silver medal?

A. 2008

B. 2004

C. 2000

D. 2012

Ans. B

9. Sariska National Park is located in which of the following states?

A. Rajasthan

B. Maharashtra

C. Punjab

D. Gujarat

Ans. A

10. Sattriya is a dance form of which of the following states?

A. Rajasthan

B. Punjab

C. Maharashtra

D. Assam

Ans. D

**Section : Reasoning**

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

Y + Z means ‘Y is husband of Z’

Y – Z means ‘Y is brother of Z’

Y × Z means ‘Y is sister of Z’

Y ÷ Z means ‘Y is mother of Z’

If P + R ÷ S × M – K, then how is R related to K?

A. Sister

B. Daughter

C. Mother

D. Paternal grandmother

Ans. C

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

3, 5, 11, 23, 43, 73,?

A. 115

B. 181

C. 151

D. 118

Ans. A

3. Study the given pattern carefully and select the number that can replace the question mark (?) in it.

|  |  |  |  |
| --- | --- | --- | --- |
| 49 | 86 | 104 | 211 |
| 65 | 70 | 88 | 195 |
| 103 | 74 | 468 | ? |
| 87 | 90 | 484 | 542 |

A. 580

B. 558

C. 855

D. 585

Ans. B

4. Five engineers H, K, P, R, T are sitting for dinner around a table facing towards the centre (not necessarily in the same order). T is between H and R. P is second to the right of R. H is to the immediate left of T. Who is sitting to the immediate left of K?

A. H

B. P

C. T

D. R

Ans. D

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

A. 3

B. 0

C. 2

D. 1

Ans. C

6. If the two hands of a clock are 15 minutes apart, then find the angle between them?

A. 45 degrees

B. 30 degrees

C. 60 degrees

D. 90 degrees

Ans. D

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

A + B means ‘A is father of B’

A – B means ‘A is husband of B’

A × B means ‘A is daughter of B’

A ÷ B means ‘A is sister of B’

How is P related to N in the Expression

P + M ÷ Q × N × T – U.

A. Husband

B. Uncle

C. Brother

D. Son

Ans. A

8. If Christmas 2019 falls on Wednesday, which day would be the 1st day of 2021?

A. Sunday

B. Friday

C. Saturday

D. Thursday

Ans. B

9. There are five cinema halls in a building near the airport – Hall1, Hall 2, Hall 3, Hall 4 and Hall 5. Hall 1 is at the bottom, Hall 2 above it and so on. Five movies – P, Q, R, S, and T are displayed in these given halls. Only one movie is displayed in a particular cinema hall. Each movie is displayed only once. Movie T is displayed at an even numbered hall. Movie Q is displayed at Hall 1. Movie P is displayed at the hall just below T. Movie S is not displayed at an even numbered hall. Which of the following statement is NOT correct about Movie R?

A. R is displayed at the odd numbered hall

B. R is displayed at the even numbered hall

C. R is displayed at just below P

D. Q is displayed at just below R

Ans. A

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

E, G, J, O, V, G, T,?

A. Z

B. J

C. M

D. K

Ans. D

**Section : General English**

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

SECURE

A. Unsafe

B. Immune

C. Shielded

D. Guarded

Ans. A

2. Select the most appropriate phrasal verb to fill in the blank.

Though he is considered to be a good speaker, this time his speech \_\_\_\_\_\_.

A. fell out

B. fell in

C. fell off

D. fell flat

Ans. D

3. Parts of the following sentence are given as options. Identify the part that has an error.

I do not like people disturb me when I am listening to music.

A. listening to music

B. when I am

C. I do not like

D. people disturb me

Ans. D

4. Select the most appropriate preposition to fill in the blanks.

The tickets are priced \_\_\_\_\_\_ Rs. 300 and are available \_\_\_\_\_\_ bookmyshow.com.

A. for; in

B. at; on

C. by; in

D. by; for

Ans. B

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

Proceeds from \_\_\_\_\_\_ concert will go to \_\_\_\_\_\_ music school’s funds towards buying \_\_\_\_\_\_ new piano.

A. a; the; the

B. the; the; a

C. a; a; the

D. a; a; a

Ans. B

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

A place which provides care for the terminally ill

A. Old age home

B. Hospice

C. Hospital

D. Clinic

Ans. B

7. Select the most appropriate conjunction to fill in the blanks.

She was \_\_\_\_\_\_ sure of herself \_\_\_\_\_\_ she did not even rehearse her part in the play.

A. as; because

B. so; that

C. so; than

D. not only; but also

Ans. B

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

To keep telling my boss about my problems is like flogging a dead horse.

A. Reviving something

B. Meaningful efforts

C. Wasteful efforts

D. Beating a horse to death

Ans. C

9. Select the correctly spelt word.

A. Cerimonious

B. Ceremonious

C. Ceremonuous

D. Cermonious

Ans. B

10. Select the most appropriate synonym of the given word.

TRANSITION

A. Change

B. End

C. Introduction

D. Stagnation

Ans. A