DMRC Electrical Engineering Paper-1 2016

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Instructions
For the following questions answer them individually

Question 1

Given that.
1. A is the brother of B
2. C is the father of A
3. D is the brother of E
4. E is the daughter of B
Then the uncle of 'D' is:

A E

B B

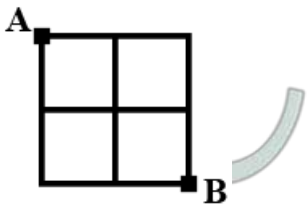
C C

D A

Answer: D

Question 2

Study the following figure:
A person goes from A to B always moving to right or downwards along the lines. How many different routes he can adopt?



Select the correct answer.

A 5

B 4

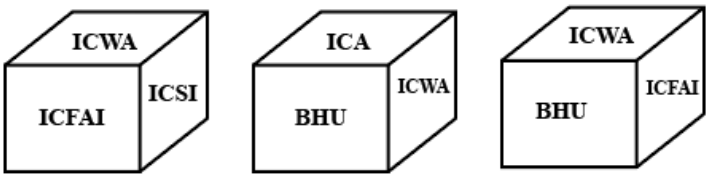
C 6

D 7

Answer: C

Question 3

Given below are three positions of the same dice having names of six institutions inscribed on six faces. The names of these institutions are, ICA, ICWA, ICSI, ICFAI, IIT, BHU.



Which name occurs on the face opposite to that of ICA?

A ICSI

B ICFAI

C IIT

D None of these

Answer: B

Question 4

Bidhya Devi Bhandari's is the?

A First female President of Nepal

B First female Prime Minister of Nepal

C First female Vice President of Nepal

D First female chief Justice of Nepal

Answer: A

Question 5

The Gulf Stream is an ocean current which begins:

A Off the coast of Florida

B From the Bay of Bengal

C Gulf countries coastline

D In the Philippines

Answer: A

Question 6

Who recently became 161st member of WTO?

A Yemen

B Seychelles

C Tajikistan

D Ukraine

Answer: B

Question 7

In the following question a number series is given. After the series a number is given followed by (a), (b), (c), (d) and (e). You have to complete the series starting with the number given following the sequence of the given series and answer the question given below the series.

3	4	16	75	364	1945
1	(a)	(b)	(c)	(d)	(e)

What will come in place of (c)

A 63

B 64

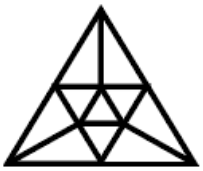
C 65

D None of these

Answer: A

Question 8

How many triangles are there in the given figure?



A 16

B 14

C 15

D None of these

Answer: C

Question 9

A frog tries to come out of a dried well 9 m deep with slippery walls. Every time the frog jumps 60 cm, he slides back by 30 cm. How many jumps will the frog have to take to come out of the well?

A 20

B 29

C 30

D 31

Answer: B

Question 10

How many minutes will it take to completely fill a water tank with a capacity of 3750 cuft, if the water is being pumped at the rate of 800 cuft. per minute and being drained out of tank at the rate of 300 cuft per mintue:

A 3 minutes 36 seconds

B 6 minutes

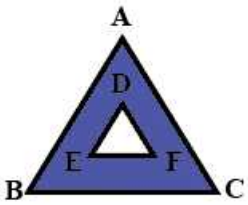
C 7 minutes 30 seconds

D 8 minutes

Answer: C

Question 11

Triangle ABC and triangle DEF are quilaterals triangles with shaded portions of equal width throughout. If AB = 4 and EF = 2, Area of the shaded portion is:



A $4\sqrt{3}$

B $3\sqrt{3}$

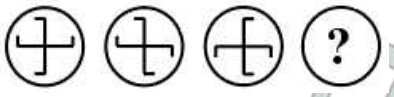
C $\sqrt{3}$

D None of these

Answer: B

Question 12

Which is next in series?



A 

B 

C 

D 

Answer: D

Question 13

In a joint family of seven persons F, E, N, J, P, M and L, there are two married couples. F is a housewife and her husband is E. J is the wife of N. L is the granddaughter of F. E is the father in law of J and father of P. M is the son of N and brother of L. How is J related to P?

A Sister

B Sister in law

C Niece

D Cousin sister

Answer: B

Question 14

Answer the following question according to the instructions given.
A $ B means A is not smaller than B
A # B means A is not greater than B
A @ B means A is neither smaller nor equal to B
A * B means A is neither greater than nor smaller than B
A % B means A is neither greater than nor equal to B
STATEMENT:
M @ J, J $ T, T * N
CONCLUSION:
I. N # J
II. T % M
III. M @ N

A Only I and II are true

B Only II is true

C Only I and III are true

D All are true

Answer: D

Question 15

One of the following is not a winner of Confucius Peace Prize of China?

A Robert Mugabe

B Vladimir Putin

C Tony Abbot

D Fidel Castro

Answer: C

Question 16

The largest blast furnace steel plant which was modernized by the Central Government and dedicated to the nation recently is in the state of:

A Bihar

B West-Bengal

C Orrisa

D Jharkhand

Answer: B

Question 17

If a runner takes as much time in running 20 meters as the car takes in covering 50 meters, the distance covered by the runner during the time the car covers 1 km is:

A 400 meters

B 40 meters

C 440 meters

D None of these

Answer: A

Question 18

The difference between the compound interest and the simple interest on a certain sum of money at 12% per annum for 2 years is ` 1800. Find the principal sum when the interest is compounded annually:

A 1,20,000

B 1,25,000

C 1,28,000

D None of these

Answer: B

Instructions

Read the information given and answer the questions based on it.

Seven boys namely Prashant, Rajesh, Salman, Tarun, Umar, Varun and Wasim go for tuitions to study different subjects namely Mathematics, Physics, Sociology, Chemistry, Biology, Economics and Accounts (not necessarily in the same order). Each student studies only one subject and each subject's tuition is only once a week. Two subjects cannot be taught in the same day. Also-
I. Prashant studies chemistry and goes on Sunday.
II. Umar goes for tuition on Friday.
III. The student who studies biology goes on Thursday
IV. Rajesh goes on Monday
V. Tarun goes on Wednesday but does not study Sociology
VI. Varun studies mathematics
VII. The student who studies economics goes on Tuesday. Wasim and Tarun do not study economics

Question 19

Mathematics tuitions are on which day of the week?

A Wednesday

B Saturday

C Friday

D Monday

Answer: B

Question 20

Umar studies which subject?

A Sociology

B Accounts

C Physics

D Cannot be determined

Answer: D

Question 21

If Umar studies accounts then on which day is sociology tuition?

A Wednesday

B Friday

C Monday

D Thursday

Answer: C

Question 22

If Rajesh studies sociology then Umar studies?

A Mathematics

B Physics

C Accounts

D Cannot be determined

Answer: D

Instructions
For the following questions answer them individually

Question 23

A group of ten persons can do a particular task in 10 days. Another group can do the same job in 20 days. In how many days will the job be finished if the groups works together (each group does part of the task in proportion to its total ability):

A $5\frac{1}{3}$

B $6\frac{2}{3}$

C $7\frac{1}{3}$

D $8\frac{1}{2}$

Answer: B

Question 24

In a certain code language LESSON is coded as NGUQML. How will PUZZLE be coded in that code language?

A RWXBJP

B RVBXJC

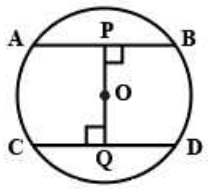
C RWBXJC

D RUBJXC

Answer: C

Question 25

In the given figure AB and CD are two parallel chords of a circle with center O and radius 5 cm. Also AB = 8 cm and CD = 6 cm. If OP AB and OQ ⊥ CD, determine the length of PQ:



A 7 cm

B 10 cm

C 8 cm

D None of these

Answer: A

Question 26

A well of inner diameter 14 m is dug to a depth of 15m. Earth taken out of it has been evenly spread all around it to a width of 7 m to form an embankment. Find the height of embankment so formed:

A 7 cm

B 5 cm

C 14 cm

D None of these

Answer: B

Question 27

Dr. APJ Abdul Kalam Collapsed only 5 minutes into his lecture at IIM, Shillong. Name this lecture.

A Creating a livable planet earth

B Ignited minds

C Forge your future

D Transforming dreams into actions

Answer: A

Question 28

A hall 50 m long and 45 m broad is to be paved with square tiles. Find the largest tile as well as its number in the given options so that the tiles exactly fit in the hall?

A 36 sq m and 80 tiles

B 16 sq m and 80 tiles

C 25 sq m and 90 tiles

D 36 sq m and 90 tiles

Answer: C

Question 29

A metal cube of edge 12 cm is melted and formed into three smaller cubes. If the edges of two smaller cubes are 6 cm and 8 cm, find the edge of the third smaller cube?

A 8 cm

B 10 cm

C 12 cm

D None of these

Answer: B

Question 30

Silk Route-2015 is a:

A Joint military training exercise between China & Sri Lanka

B A route defined for smuggling of gold between India & Dubai

C Silk trade agreement between India & Silk producing countries

D Anti terrorism agreement between SAARC countries

Answer: A

Question 31

Match the places to the state to which it belongs.

STATE	PLACES
A. West Bengal	1 Badrinath Temple
B. Tripura	2 Ujjayanta Palace
C. Uttarakhand	3 Hajo
D. Assam	4 Kalimpong

A A-1, B-2, C-3, D-4

B A-4, B-2, C-1, D-3

C A-2, B-3, C-1, D-4

D A-1, B-2, C-4, D-3

Answer: D

Question 32

Match the following in the given sequence in context of memory:

A. Very High Speed	1 DVD
B. Non-Volatile & high stora	2 ROM
C. External & cheaper	3 Cache
D. Read only	4 Hard Disk

A A1, B2, C2, D4

B A1, B3, C4, D2

C A3, B4, C2, D1

D A3, B4, C1, D2

Answer: D

Question 33

The temples of Halebid and Belur were built by:

A Cholas

B Hoysalas

C Rashtrakutas

D Pallavas

Answer: B

Question 34

The perimeters of a square and a regular hexagon are equal. The ratio of the area of the hexagon to the area of the square is:

A $2\sqrt{3} : 1$

B $2\sqrt{3} : 3$

C $3\sqrt{3} : 2$

D $\sqrt{2} : 3$

Answer: B

Question 35

Which of the following ports of India is on the eastern Coast:

A Cochin

B Tuticorin

C Kandla

D Mumbai

Answer: B

Question 36

Which of the following are included in the original jurisdiction of the Supreme Court?
1. A dispute between the Government of India and one or more states.
2. A dispute regarding elections to either house of the parliament or that of legislative of a state.
3. A dispute between the Government of India and a union territory.
4. A dispute between two or more states.
Select the correct answers using the codes.

A 1 & 2

B 2 & 3

C 1 & 4

D 3 & 4

Answer: C

Question 37

Two trains moving in opposite directions cross each other in 7.5 seconds. If the length of one train is 150 m, what is the length of the other train if the trains are travelling at 50 & 70 km. per hour respectively:

A 100 m

B 150 m

C 125 m

D 200 m

Answer: A

Question 38

Three pipes A, B, C can fill a tank from empty to full in 30 minutes, 20 minutes, and 10 minutes respectively. When the tank is empty, all three pipes are opened. A B & C discharge chemical solution 'Q', 'R', 'S' respectively. What is the proportion of solution 'S' in the liquid in the tank after 3 minutes:

A $\frac{7}{11}$

B $\frac{5}{11}$

C $\frac{6}{11}$

D $\frac{8}{11}$

Answer: C

Question 39

Recently Government of India has constituted a committee under the chairmanship of Justice R.V. Easwar to look into?

A To look into the implementation of goods & service tax

B To look into the affairs of Physically challenged person

C To look into the affairs of Niti Aayog

D The simplification of provisions of Income Tax Act

Answer: D

Question 40

Identify the odd one out (refer to National Sports Awards for 2014-15):

A Harbans Singh

B Sandeep Kumar

C Anoop Singh

D Naval Singh

Answer: B

Question 41

2022 Common Wealth Games will be hosted by:

A Durban

B Gold Coast

C Victoria

D Kingston

Answer: A

Question 42

There are two clocks, both set to show 10 pm on 21st January 2010. One clock gains 2 minutes in an hour and the other clock loses 5 minutes in an hour. then by how many minutes do the two clocks differ at 4pm on 22nd January 2010?

A 126 minutes

B 136 minutes

C 96 minutes

D 106 minutes

Answer: A

Question 43

A publisher sells copies of books to a retail dealer at 5 per copy but allows 25 copies to be counted as 24. If the retailer sells each of the 25 copies at 6, his profit % is:

A 20%

B 24%

C 25%

D 40%

Answer: C

Instructions

Each question below is followed by two statement I and II. You are to determine whether the data given in the statement is sufficient for answering the question. You should use the data and your knowledge of mathematics to choose between the possible answers.

A. If the statement I alone is sufficient to answer the question but the statement II alone is not sufficient.
B. If the statement II alone is sufficient to answer the question but statement I alone is not sufficient.
C. If both statements I and II together are needed to answer the question.
D. If either the statement I alone or statement II alone is sufficient to answer the question.
E. If you can not get the answer from statement I and II together but need even more data.

Question 44

X, Y and Z are three consecutive odd number (not necessary in this order). What is the sum of these number?
I. The difference of Y & Z is 4
II. One third of X is 33

A A

B B

C C

D D

Answer: C

Question 45

What is the number?
I. 25% of that number is one fourth of that number
II. $\frac{3}{4}$ **of that number is less by 14 of that number.**

A A

B B

C C

D D

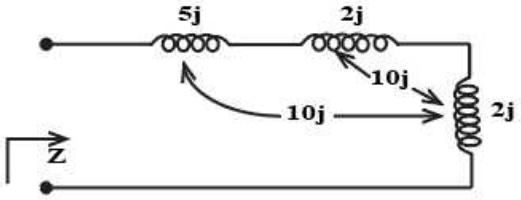
Answer: B

TECHNICAL (APTITUDE)

Instructions
For the following questions answer them individually

Question 46

Impedance Z is as shown in fig:



A 29j ohm

B 9j ohm

C 19j ohm

D 39j ohm

Answer: B

Question 47

For highest power gain, what configuration is used:

A CC

B CE

C CB

D CS

Answer: B

Question 48

An SCR has ..... PN junctions:

A Two

B Four

C Three

D One

Answer: C

Question 49

A pole pitch in electrical machine is:

A Equal to 180° electrical

B Equal to 180° mechanical

C Less than 180° electrical

D Greater than 180° electrical

Answer: A

Question 50

Which of the following compensator will increase the bandwidth of the system:

A Phase lag

B Phase lead

C Lag-lead

D None of these

Answer: A

Question 51

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

A Increase line resistance

B Increase transmission voltage

C Decrease line reactance

D Both (2) & (3)

Answer: D

Question 52

The instantaneous voltage and current across a load is given by $v = 50\sin(314t - \frac{\pi}{6})$ volts and $i = 10\sin(314t - \frac{\pi}{2})$ amperes, respectively. The active power consumed by the load is:

A 500 watts

B 125 watts

C 1000 watts

D None of these

Answer: B

Question 53

Drop in alternator frequency is corrected by:

A Damper winding

B Increased prime mover output

C Automatic voltage regulator

D None of these

Answer: B

Question 54

In a galvanometer, the deflection becomes one half when the galvanometer is shunted by a 20 ohm resistor. The galvanometer resistance is:

A 5 ohm

B 10 ohm

C 40 ohm

D 20 ohm

Answer: B

Question 55

In a three phase half wave rectifier feeding resistive load, if the input source is a three phase 4 wire system and line to line voltage is 100 V. The supply frequency is
400 Hz. The ripple frequency at the output is:

A 400 Hz

B 800 Hz

C 1200 Hz

D None of these

Answer: C

Question 56

Ripple in output current of a step-down chopper feeding RLE load is maximum, when duty cycle is equal to:

A 1

B 0.5

C 0.75

D 0.33

Answer: B

Question 57

Which of the following are constant losses in Transformers?

A Winding losses

B Core losses

C Both Winding & core losses

D None of these

Answer: B

Question 58

Deep bar rotor construction is used in three phase induction motors to mainly:

A Control speed

B Control power factor

C Increase starting torque

D None of these

Answer: C

Question 59

Two transformers with identical voltage ratings are working in parallel to supply common load. The percentage impedance of one transformer is higher compared to that of other. The load sharing between the two transformer will:

A Be proportional to their percentage impedance

B Be independent of their percentage impedance

C Be inversely proportional to their respective impedance

D Depend on the resistance to leakage reactance ratio of each transformer

Answer: C

Question 60

Number of comparators required for an 8 bit flash ADC is:

A 8

B 16

C 255

D 256

Answer: C

Question 61

A 35 V dc supply is connected across a resistance of 600 ohm in series with an unknown resistance R. A voltmeter having a resistance of 1.2 k Ω is connected across 600 ohm resistances and reads 5 V. The value of resistance R shall be:

A 1.2 Ω

B 2.4 Ω

C 120 Ω

D 400 Ω

Answer: B

Question 62

A three phase slip ring induction motor is fed from the rotor side with stator winding short circuited stator is:

A Slip frequency

B Supply frequency

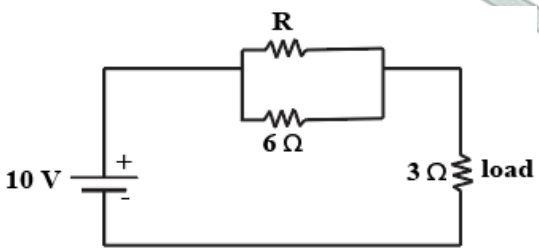
C Frequency corresponding to rotor speed

D Zero

Answer: A

Question 63

In the circuit given below, the value of R required for the transfer of maximum power to the load having a resistance of 3 Ω will be?



A 3 Ω

B 10 Ω

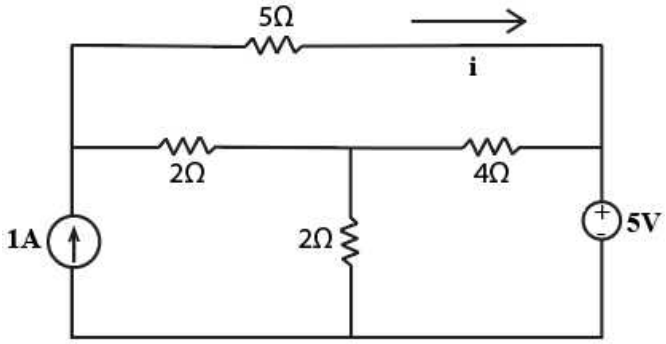
C 6 Ω

D 9 Ω

Answer: C

Question 64

In the following given circuit what will be the value of current i in the 5Ω resistor?



A 5 A

B 4 A

C 2 A

D 0 A

Answer: D

Question 65

From source $Vs = 200\cos\omega t$, a load draws current Im = 2.5 at power factor 0.6 lagging. The load impedance is:

A 48 + 64j

B 40 + 50j

C 30 + 64j

D 48 + 50j

Answer: A

Question 66

Two capacitor C1 and C2 have $C1 = 20\mu F$ and $C2 = 30\mu F$, are connected in parallel across a 100V source. The net capacitance of the circuit is?

A $50\mu F$

B $10\mu F$

C $12\mu F$

D $60\mu F$

Answer: A

Question 67

Power-factor of industrial arc and induction furnace is:

A High lagging

B High leading

C Low lagging

D Very low lagging

Answer: D

Question 68

A 100 mA meter has accuracy of $\pm 2\%$. Its accuracy while reading 50 mA will be:

A $\pm 1\%$

B $\pm 2\%$

C $\pm 4\%$

D $\pm 20\%$

Answer: C

Question 69

A series inductor is normally added in a thyrister circuit for achieving protection against:

A High current

B High voltage

C High $\frac{di}{dt}$

D High $\frac{dv}{dt}$

Answer: C

Question 70

Clamp on ammeter is used for measurement of:

A Large alternating currents

B Small direct currents

C Small alternating currents

D Large direct currents

Answer: A

Question 71

Consider the following statements:
Over head transmission lines are provided with earth wires:
1. To protect the transmission line from direct lightning strike
2. To protect the transmission line insulation from the indirect lightning strike
3. To balance the line currents
4. To provide path for neutral current
Which of these statement/s is/are correct?

A 1 and 3

B 1 and 4

C 1 only

D 2 only

Answer: C

Question 72

An ammeter has a current range of 0-5 A, and its internal resistance is 0.2Ω. In order to change the range to 0-25 A, what should be the value of resistance added and how it would connect with meter (i.e. series/parallel)?

A (0.05 Ω/series)

B (0.05 Ω /parallel)

C (0.20 Ω/parallel)

D (0.20 Ω/series)

Answer: B

Question 73

Power consumed by a balanced 3-phase, 3 - wire load is measured by two wattmeter method. The first wattmeter reads twice that of the second. Then what will be the load impedance angle in radian?

A $\left(\frac{\pi}{6}\right)$

B $\left(\frac{\pi}{3}\right)$

C $\left(\frac{\pi}{2}\right)$

D $\left(\frac{\pi}{4}\right)$

Answer: A

Question 74

The X/R ratio for distribution lines is:

A Less than unity

B More than unity

C Equal to unity

D None of these is necessary

Answer: B

Question 75

Corona loss is minimum in:

A Monopolar HVDC line

B Bipolar HVDC line

C Both in Monopolar& Bipolar HVDC lines

D EHV AC lines

Answer: A

Question 76

The potential transformers' Nominal Ratio is defined as the ratio of:

A Primary winding voltage and secondary winding voltage

B Rated primary winding voltage and rated secondary winding voltage

C Primary winding turns and secondary winding turns

D Any of the above

Answer: B

Question 77

Whenever a 3-phase fault takes place at the terminals of an induction generator, the sustained fault current is:

A Equal to the full load current

B About 20 times the full load current

C Much less than full load current

D About 10 times the full load current

Answer: C

Question 78

For complete protection of a 3- phase line:

A Three phase and three-earth fault relays are required

B Three phase and two-earth fault relays are required

C Two phase and two-earth fault relays are required

D Two phase and one-earth fault relays are required

Answer: D

Question 79

When two transformer of different kVA rating are connected in parallel they share the load in proportion to their respective kVA rating only when their:

A KVA rating are identical

B Efficiencies are equal

C P u impedance are equal

D Equivalent impedance are equal

Answer: C

Question 80

The most efficient torque - producing actuating structure for induction - type relay is:

A Shaded pole structure

B Watt - hour - meter structure

C Induction - cup structure

D Single - induction loop structure

Answer: C

Question 81

Triac are usually operated at:

A All frequencies

B High frequency only

C Power frequency

D None of these

Answer: C

Question 82

Earth wire on EHV overhead transmission line is provided to protect the line against:

A Lightning surge

B Switching surge

C Excessive fault voltage

D Corona effect

Answer: A

Question 83

The measurement range of an ammeter can be increased by using a:

A High resistance in shunt

B Low resistance in shunt

C High resistance in series

D Low resistance in series

Answer: B

Question 84

Three equal resistors, connected in series across a source of emf, dissipated 10W of power. What would be the power dissipated in the same resistor when they are connected in parallel across the same source?

A 10 W

B 30 W

C 90 W

D 270 W

Answer: C

Question 85

If a 3-pahse, 40V, 50Hz, 4 pole induction motor is running at a slip of 5% then the relative speed of rotor field with respect to stator filed is:

A Zero

B 75 rpm

C 142.5 rpm

D 1500 rpm

Answer: A

Question 86

A 3-phase induction motor is running at slip 's'. If its two supply leads are interchanged, then the operating slip at that instant will be:

A 2s

B (1 - s)

C (2 - s)

D Zero

Answer: C

Question 87

In a 3-phase voltage source inverter used for speed control of induction motor, antiparallel diodes are used across each switching device. The main purpose of diodes is to:

A Protect the switching devices against over voltage

B Provide path for freewheeling current

C Allow the motor to return energy during regeneration

D Help in switching off the devices

Answer: C

Question 88

Skewing of rotor bars eliminate the:

A Effect of space harmonics

B Entire effect of crawling

C Magnetic noise

D Vibration due to unequal force developed on rotor

Answer: A

Question 89

Out of the followings, which one is correct in case of a circuit breaker?

A Making capacity = 2.55 × braking capacity

B Braking capacity = 2.55 × making - capacity

C Making capacity = 1.8 × braking capacity

D Braking capacity = 1.8 × making capacity

Answer: A

Question 90

The steady-state fault current during a 3 phase terminal fault on a generator is limited by:

A Transient reactance of the generator

B Sub-transient reactance of the generator

C Synchronous reactance of the generator

D DC off-set during the instant of the cfault

Answer: C

Question 91

A 3-phase delta connected squirrel cage induction motor when started with a DOL starter has a starting torque of 600 NM. Its starting torque when star delta starter is used:

A 600 NM

B 200 NM

C 300 NM

D 1200 NM

Answer: B

Question 92

Making current of a circuit breaker refers to:

A Steady state rated current

B Average value of transient short circuit current

C R.M.S. value of the short circuit current at the time of major peak

D Equal to the fault current

Answer: C

Question 93

In case of a 'High Voltage DC' transmission, how many minimum conductors are required?

A One

B Two

C Three

D Four

Answer: A

Question 94

Which of the following motor has squirrel cage winding on the stator:

A 3 phase squirrel cage induction motor

B Single phase squirrel cage pump motor

C Single phase ceiling fan induction motor

D Single phase table fan induction motor

Answer: C

Question 95

In order to switch-off and EHV circuit for maintenance, the following sequence is adopted:

A Open the circuit breaker, open the isolator, operate the earth switch

B Operate the earth switch, open the isolator, open the circuit breaker

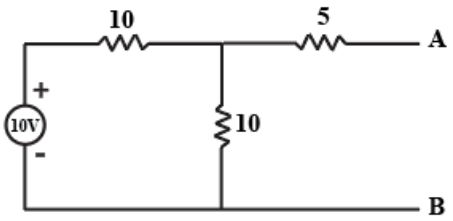
C Open the isolator, operate the earth switch, open the circuit breaker

D Open the isolator, open the circuit breaker, operate the earth switch

Answer: A

Question 96

For the circuit given in the fig, the thevenis's voltage and resistance as seen at AB are represented by:



A 5 V, 10 Ω

B 10V, 10 Ω

C 5 V, 5 Ω

D 54V, 15 Ω

Answer: A

Question 97

Why are shunt reactors connected at the receiving end of long transmission line system:

A To increase the terminal voltage

B To compenstate voltage rise caused by capacitive charging at light load

C To improve power factor

D None of these

Answer: B

Question 98

A 10 Ω resistor is connected in parallel with a 15Ω resistor and the combination in series with a 12 Ω resistor. The equivalent resistance of the circuit is:

A 37 Ω

B 27 Ω

C 18 Ω

D None of these

Answer: C

Question 99

A nickel coil has a resistance of 13 Ω at 50°C. If the temperature coefficient of resistance at 0°C is 0.006/°C, the resistance at 0°C is:

A 16.9Ω

B 10Ω

C 43.3Ω

D None of these

Answer: B

Question 100

The energy used by a 1.5kW heater in 5 minutes is:

A 450 000 J

B 450 J

C 7500 J

D None of these

Answer: A

Question 101

What is called the Electro-Motive Force (EMF) of a voltage source?

A Terminal voltage when load is applied

B Internal voltage when no load is applied

C Product of internal resistance and load current

D Electric pressure provided to the load

Answer: B

Question 102

A permanent magnet moving coil ammeter has a coil resistance of 99 ohm and Full Scale Deflection (FSD) current of 0.1 mA. Shunt resistance is 1 ohm. Current through the meter at 0.5 F.S.D is:

A 0.007 mA

B 0.05 mA

C 0.023 mA

D None of these

Answer: B

Question 103

For power measurement of three phase circuit by two wattmeter method, when the value of power factor is less than 0.5 lagging:

A One of the wattmeters will read zero

B Both give the same readings

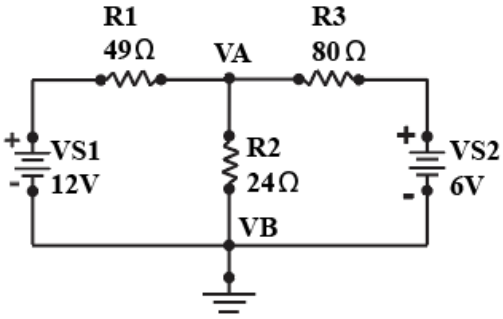
C One of the wattmeter connections will have to be reversed

D Pressure coil of the wattmeter will become ineffective

Answer: C

Question 104

Find the node voltage VA:



A 6 V

B 12 V

C 4.25 V

D None of these

Answer: C

Question 105

One international ohm is equal to:

A 1.00049 absolute ohm

B 0.99951 absolute ohm

C 0.969 absolute ohm

D 1.049 absolute ohm

Answer: A

Question 106

In a uniform electric field, field lines and equipotentials:

A Are parallel to one another

B Intersect at 45°

C Intersect at 30°

D Are orthogonal

Answer: D

Question 107

During forward blocking state, the SCR has:

A Low current, medium voltage

B Low current, large voltage

C Medium current, large voltage

D Large current, low voltage

Answer: B

Question 108

Turn on time of an SCR can be reduced by using a:

A Rectangular pulse of high amplitude and narrow width

B Rectangular pulse of low amplitude and wide width

C Triangular pulse

D Trapezoidal pulse

Answer: A

Question 109

The disruptive critical voltage will:

A Decrease with the increase of moisture content in air

B Increase with the increase of moisture content in air

C Increase with the decrease of moisture content in air

D Decrease with the decrease of moisture content in air

Answer: A

Question 110

What type of insulator will be used if the direction of the transmission line is to be changed?

A Pin-type

B Suspension type

C Strain type

D Shakle type

Answer: B

Question 111

Which statement is correct:

A SF_6 gas is toxic

B SF_6 gas is lighter than air

C SF_6 gas is yellow in colour

D SF_6 gas has pungent smell

Answer: A

Question 112

One coulomb of electrical charge is contributed by how many electrons?

A 0.625×10^{19}

B 1.6×10^{19}

C 10^{19}

D None of these

Answer: A

Question 113

A dynamic system with input x(t) and output y(t) is represented by the following:

A y(t) = f(x(t), t)

B $y(t) = ax(t) + bx^2(t)$

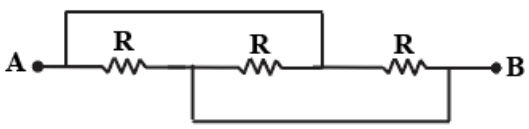
C $y(t) = ax\sin(t)$

D None of these

Answer: A

Question 114

Three equal resistors each equal to R ohm are connected as shown in fig. The equivalent resistance between points A and B is:



A R

B 3R

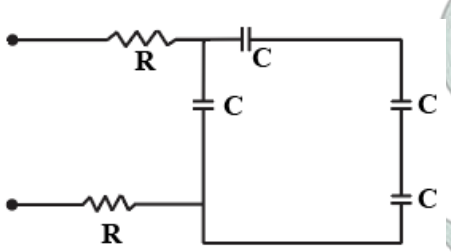
C $\frac{R}{3}$

D $\frac{2R}{3}$

Answer: C

Question 115

The time constant of the circuit shown in fig. is:



A $\frac{RC}{3}$

B $\frac{4RC}{3}$

C $\frac{2RC}{3}$

D $\frac{8RC}{3}$

Answer: D

Question 116

If the current in the armature of d.c series motor is reduced to 5%, the torque of the motor will become:

A 50% of the previous value

B 25% of the previous value

C 150% of the previous value

D 125% of the previous value

Answer: B

Question 117

If the excitation of an alternator operating in parallel with other alternators decreased, its:

A Power factor becomes more leading

B Output Kw will change

C Power factor becomes more lagging

D Power factor becomes unity

Answer: A

Question 118

The output signal of a common-collector amplifier always:

A Larger than the input signal

B In phase with the input signal

C Out of phase with the input signal

D Exactly equal to the input signal

Answer: B

Question 119

A current is said to be alternating when it changes in:

A Magnitude

B Direction

C Both magnitude and direction

D None of these

Answer: C

Question 120

Hysteresis loss in a transformer depends up on:

A Frequency

B Supply voltage

C Square of the frequency alone

D Square of the voltage alone

Answer: A