



SSC JE Electrical Engineering 23rd Jan 2018 Shift-1

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General Intelligence and Reasoning

Instructions

In the following question, select the related word pair from the given alternatives

Question 1

Red : Colour :: ? : ?

- A Sun : Heat
- B Earth : Planet
- C Land : Solid
- D Water : Drink

Answer: B

Question 2

Square : Four :: ? : ?

- A Rectangle : Five
- B Hexagon : Seven
- C Rhombus : Six
- D Triangle : Three

Answer: D

Question 3

Forest : Trees :: Book : ?

- A Pages
- B Bind
- C Writer
- D Pen

Answer: A

Question 4

TRAP : YWFU :: FROG : ?

- A KHLG
- B KWTL
- C WKLH
- D FGHL

Answer: C

Question 5

FAN : MZU :: LIP : ?

- A FGA
- B KRO
- C ANP
- D TSQ

Answer: B

Question 6

AM : FR :: LQ : ?

- A HQ
- B NP
- C QV
- D LS

Answer: C

Instructions

In the following question, select the related number from the given alternatives.

Question 7

46 : 24 :: 54 : ?

- A 30
- B 24
- C 20
- D 36

Answer: C

Question 8

11 : 24 :: 23 : ?

- A 42
- B 36
- C 54
- D 58

Answer: B

Question 9

5 : 15 :: 7 : ?

- A 28
- B 21

C 37

D 25

Answer: B



Instructions

In the following question, select the odd word from the given alternatives.

Question 10

A Pen - Write

B Ball - Play

C Food - Eat

D Pencil - Stationery

Answer: D

Question 11

A Road

B Truck

C Car

D Scooter

Answer: A

Question 12

A Rice

B Wheat

C Maize

D Crop

Answer: D

Question 13

A GJM

B HKN

C MPS

D NQU

Answer: D

Question 14

A LQVA

B AFKQ



C CHMR

D MRWB

Answer: B

Question 15

A VRNJ

B CYUQ

C KGCX

D SOKG

Answer: C

Question 16

A 2 - 12

B 5 - 28

C 4 - 24

D 3 - 18

Answer: B

Question 17

A 11 - 13

B 13 - 17

C 17 - 19

D 11 - 15

Answer: D

Question 18

A 4 - 12

B 5 - 15

C 6 - 18

D 9 - 29

Answer: D

Instructions

For the following questions answer them individually

Question 19

Arrange the given words in the sequence in which they occur in the dictionary.

1. Series
2. Singing
3. Secure
4. Sickle
5. Secured

- A 35142
- B 53142
- C 35124
- D 53124

Answer: A

Question 20

Arrange the given words in the sequence in which they occur in the dictionary.

1. Drive
2. Drown
3. Drain
4. Drink
5. Drama

- A 35421
- B 35412
- C 35214
- D 35241

Answer: B

Question 21

Arrange the given words in the sequence in which they occur in the dictionary.

1. Price
2. Prize
3. Police
4. Paint
5. Prawn

- A 45123
- B 45213
- C 43521
- D 43512

Answer: D

Question 22

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series
AG, FM, KS, PY, ?

- A RM
- B UE
- C JQ
- D YA

Answer: B

Question 23

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
ALK, VGF, QBA, ?, GRO

- A KST
- B ARP
- C CXD
- D LWV

Answer: D

Question 24

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
KPD, QVJ, WBP, CHV, ?

- A INB
- B GXF
- C ICM
- D ZDQ

Answer: A

Question 25

In the following question, select the missing number from the given alternatives.
3, 7, 11, 63, 27, 215, ?, ?

- A 47, 513
- B 51, 511
- C 51, 513
- D 47, 511

Answer: B

Question 26

In the following question, select the missing number from the given alternatives.
18, 45, 112.5, ?, 703.125

- A 217.5
- B 262.25
- C 281.25
- D 273.75

Answer: C

Question 27

In the following question, select the missing number from the given alternatives.
30, 68, 130, 222, 350, ?

A 504

B 520

C 476

D 448

Answer: B

Question 28

Seg CD is shorter than Seg MN, Seg MN is shorter than Seg TR, Seg AB is shorter than Seg CD and Seg MN is shorter than Seg PQ. Which segment is the shortest?

A CD

B MN

C PQ

D AB

Answer: D

Question 29

A is B's father's father's daughter-in-law's daughter. If B's father has no brother then how is A related to B?

A grand-daughter

B daughter

C mother

D sister

Answer: D

Question 30

From the given alternative words select the word which cannot be formed using the letters of the given word. RECUPERATE

A acute

B trace

C price

D erupt

Answer: C

Question 31

If TUESDAY is coded as VWGUFGA, then how will COW be coded as?

A EQY

B XLD

C BNV

D DPX

Answer: A

Question 32

In a certain code language, 2369 means 'master class is fun', 9527 means 'act is class apart' and 1349 means 'we have fun class'. Find the code for 'fun'.

A 2

B 6

C 3

D 9

Answer: C

Question 33

In a certain code language, '+' represents '-', '-' represents 'x', 'x' represents '÷' and '÷' represents '+'. Find out the answer to the following question.

$$16 - 25 \times 40 \div 60 + 15 = ?$$

A 14

B 72

C 55

D 63

Answer: C

Question 34

If $72 \$ 20 = 46$ and $1 \$ 27 = 14$ then find the value of $10 \$ 44 = ?$

A 34

B 54

C 27

D 17

Answer: C

Question 35

If $A \$ B$ means A is son of B, $A \# B$ means A is brother of B and $A * B$ means A is father of B, then what does $P \# Q \$ R * S$ mean?

A P is father of S

B P is father's father of S

C P is brother of S

D P is son of S

Answer: C

Question 36

Select the missing number from the given responses?

7	4	2
6	?	5
1	-6	-3

- A 2
- B 11
- C 1
- D 10

Answer: D

Question 37

Which of the following terms follows the trend of the given list?

AAAAAABA, AAAAAAAB, BAAAAAAA, ABAAAAAA, AABAAAAA, _____.

- A AAAAAABA
- B AAABAAAA
- C AAAABAAA
- D AAAAABAA

Answer: C

Question 38

A Shopping mall worker loads his trolley and walks 50 m through an alley which is going North, then he turns to his left and walks 15 m, then he turns South and walks another 15 m, then he turns East and walks 25 m and then he turns south and walks 35 m. Where is he now with reference to his starting position?

- A 10 m West
- B 10 m East
- C 40 m East
- D 40 m West

Answer: B

Question 39

Two battle tanks start from the same point. Tank A travels 12 km South, then turns to its left and travels 7 km. Tank B travels 7 km South, then turns West and travels 9 km, then turns to its left and travels 5 km. Where is tank A with respect to tank B?

- A 16 km West
- B 2 km East
- C 2 km West

D 16 km East

Answer: D

Question 40

In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statement I: No cats are dogs

Statement II: Some cats are carnivores

Conclusion I: All dogs are carnivores

Conclusion II: All carnivores are dogs

A Only conclusion I follows

B Only conclusion II follows

C Both conclusions I and II follow

D Neither conclusion I nor conclusion II follows

Answer: D

Question 41

In the question three statements are given, followed by three conclusions, I, II and III. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements

Statement I: No bronze is copper

Statement II: Some alloy is bronze

Statement III: Some zinc is alloy

Conclusion I: Some zinc is bronze

Conclusion II: Some copper is zinc

Conclusion III: some alloy is copper

A Only conclusions I and II follow

B Only conclusions II and III follow

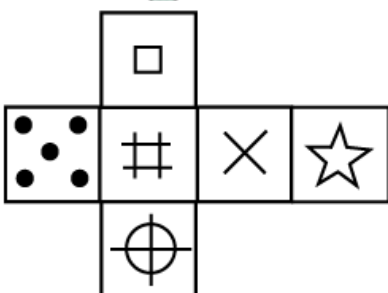
C All conclusions I, II and III follow

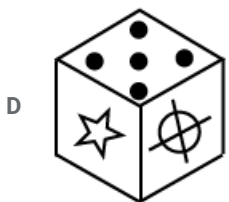
D None of the conclusions follow

Answer: D

Question 42

Which of the following cube in the answer figure can not be made based on the unfolded cube in the question figure ?

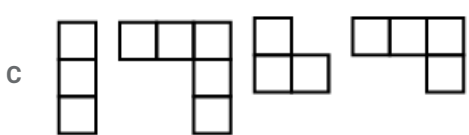
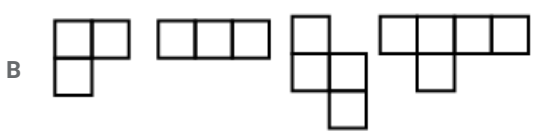
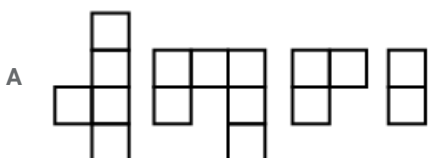
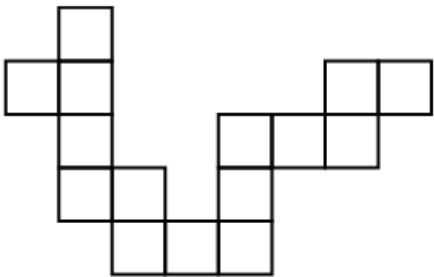


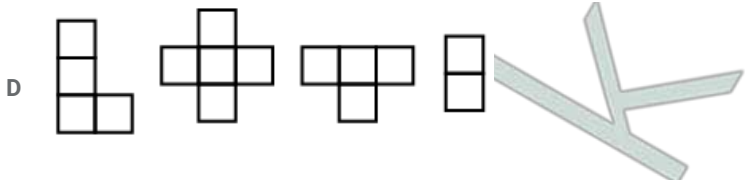


Answer: B

Question 43

Which of the following answer figure patterns can be combined to make the question figure?

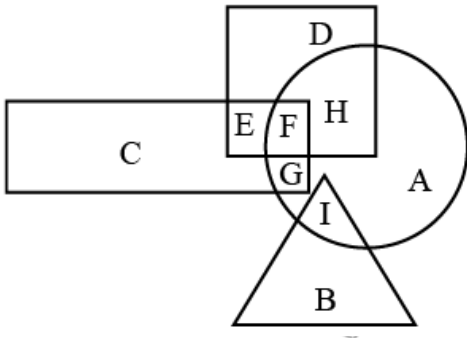




Answer: B

Question 44

In the following figure square represents astronauts, triangle represent swimmers, circle represents women and rectangle represents Indians. Which set of letter represents women who are either astronauts or swimmer ?



- A FHGI
- B DEIA
- C IBFG
- D FHI

Answer: D

Question 45

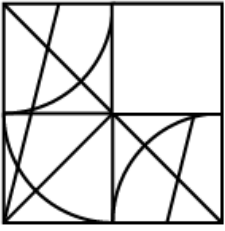
which of the following represents relation ship between pencils and pens and writing instruments?

- A
- B
- C
- D

Answer: C

Question 46

which of the following pattern will complete the pattern in the question figure?



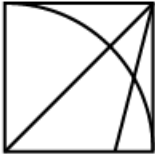
A



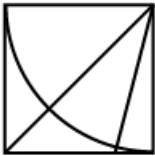
B



C



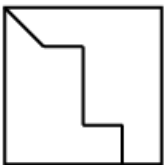
D



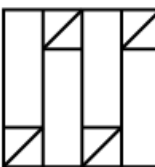
Answer: C

Question 47

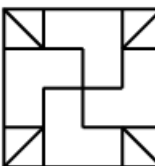
From the given answer figures ,select the one in which the question figure is hidden /embedded.

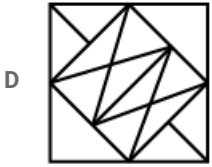
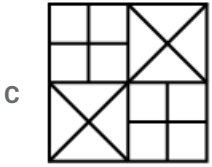


A



B

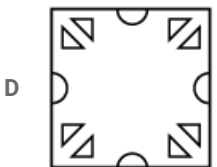
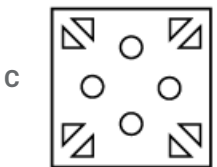
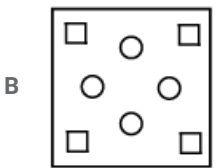
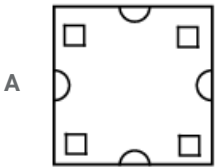
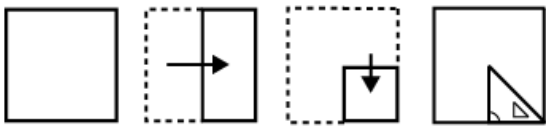




Answer: B

Question 48

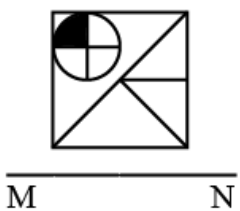
A piece of paper is folded and punched as shown below in the question figures .from the given answer figures ,indicate how it will appear when opened ?

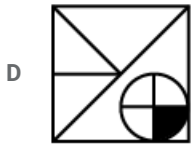
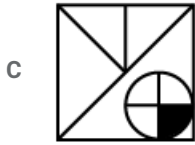
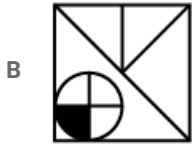
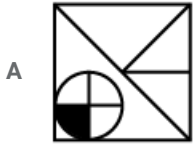


Answer: D

Question 49

If the mirror is placed on the line MN, then which of the following answer figures in the right image of the given figure?





Answer: B

Question 50

A word is represented by only one set of numbers as given in any one of the alternatives. The set of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The column and rows of Matrix-1 are numbered from 0 to 4 and that of Matrix-II is numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column. For c can be represented by 76,89 etc, similarly you have to identify set for the word 'SODA'

Matrix I					
	0	1	2	3	4
0	J	G	J	A	H
1	B	A	D	B	L
2	B	D	A	F	L
3	L	C	G	B	B
4	B	K	B	C	B

Matrix II					
	5	6	7	8	9
5	S	Q	R	T	X
6	S	T	T	U	O
7	T	W	W	S	T
8	Q	R	O	T	W
9	Q	P	T	S	X

A 65,85,21,40

B 78,87,12,03

C 55,67,12,33

D 98,69,22,14

Answer: B

General Awareness

Instructions

For the following questions answer them individually

Question 51

By what name is the BRICS bank presently known?

A BRICS Development Bank

- B Afro-Asia Development Bank
- C New Development Bank
- D No option is correct

Answer: C

Question 52

What does parallel economy mean?

- A Black Money
- B Parallel Business
- C Illegal Economy
- D No option is correct

Answer: A

Question 53

Who implements monetary policy in India?

- A NITI Aayog
- B RBI
- C Ministry of Finance
- D Parliament

Answer: B

Question 54

The ARDC is a branch of the NABARD. What is the full form of ARDC?

- A Agricultural Research and Development Corporation
- B Agriculture and River Development Cooperation
- C Agricultural Reform and Development Cooperation
- D Agricultural Refinance and Development Corporation

Answer: C

Question 55

Which of the following is a part of machinery that settles industrial disputes?

- A Labour Court
- B Industrial Tribunal
- C Work Committee
- D All options are correct

Answer: D

Question 56

In which year Nagaland was created as separate state?

- A 1961
- B 1962
- C 1963
- D 1964

Answer: C

Question 57

Which one of the following is responsible for the preparation and presentation of Union Budget?

- A Department of Economic Affairs
- B Department of Revenue
- C Department of Expenditure
- D No option is correct.

Answer: A

Question 58

Who presided over the inaugural meeting of the Constituent Assembly of India?

- A Dr Rajendra Prasad Sardar Patel
- B Dr Sachchidanand Sinha
- C B R Ambedkar
- D Sardar Patel

Answer: B

Question 59

Which of the following was not adopted from the Maurya Dynasty in the emblem of Government of India?

- A Satyameva Jayate
- B Bull
- C Horse
- D Four Lions

Answer: A

Question 60

The first session of Constituent Assembly of India was held in which of the following cities?

- A Bombay
- B Madras

C Culcutta

D Delhi

Answer: D

Question 61

Which of the following is the best example of Vijaynagar Art?

A Ajanta

B Hampi

C Puri

D Sanchi

Answer: B

Question 62

Taxila was capital of which among the 16 Mahajanpadas?

A Kosala

B Kuru

C Vajji

D Gandhara

Answer: D

Question 63

Who was founder of Mughal Empire in India?

A Babur

B Humayun

C Akbar

D Jahangir

Answer: A

Question 64

Where did Vasco da Gama arrive in India in 1498?

A Madras

B Calcutta

C Calicut

D Bombay

Answer: C

Question 65

According to the treaty of Srirangapattanam, which of the following was ceded to the British?

- A Mysore
- B Hampi
- C Kannur
- D Malabar

Answer: D

Question 66

By what name is the Ganga known in Bangladesh?

- A Padma
- B Ganga
- C Damodar
- D Meghna

Answer: A

Question 67

Which of the following are not kharif crops?

- A Maize and Rice
- B Arhar and Soyabean
- C Wheat and Barley
- D Ragi and Groundnut

Answer: C

Question 68

How many seismic stations are required to locate the epicentre of an earthquake?

- A 3
- B 4
- C 5
- D 6

Answer: A

Question 69

Madhya Pradesh shares its border with how many States?

- A 5
- B 4

C 6

D 3

Answer: A

Question 70

Palghat joins which of the following states?

A Goa and Maharashtra

B Kerala and Karnataka

C Tamil Nadu and Kerala

D Mizoram and Manipur

Answer: C

Question 71

Which of the following authorities regulates NPS?

A IRDA

B PFRDA

C CAG

D SEBI

Answer: B

Question 72

Which of the following is a centrally sponsored scheme to empower adolescent girls?

A SAKSHAM

B ABLA

C SABLA

D BBBPS

Answer: C

Question 73

Which among the following has inscribed Kumbh Mela on the Representative List of Intangible Cultural Heritage of Humanity?

A WHO

B UNCTAD

C ADB

D UNESCO

Answer: D

Question 74

Who has been appointed as the General Manager of Board of Control for Cricket in India?

- A MV Sridhar
- B Saba Karim
- C Rahul Johri
- D Anurag Thakur

Answer: B

Question 75

FIFA World Cup 2022 will be held in which country?

- A Russia
- B Spain
- C Ukrain
- D Qatar

Answer: D

Question 76

The Idea of Justice" is written by _____.

- A Ravindra Singh
- B Mamta Banerjee
- C Amartya Sen
- D Abhinav Bindra

Answer: C

Question 77

Which author has been made Companion of Honour on December 12, 2017?

- A J. K. Rowling
- B Roald Dahl
- C Charlotte Bronte
- D Jane Austen

Answer: A

Question 78

31st Surajkund International Crafts Mela has begun at which of the following city?

- A Faridabad
- B Jaipur

C New Delhi

D Jaisalmer

Answer: A

Question 79

ONGC Videsh has got a two year extension to explore which country's Oil block-128 in the south China sea?

A Cambodia

B Vietnam

C Taiwan

D Philippines

Answer: B

Question 80

The 5th India-Sri Lanka joint training exercise "Mitra Shakti 2017" was held in which state of India?

A New Delhi

B Tamil Nadu

C Maharashtra

D West Bengal

Answer: C

Question 81

BIOS is a _____.

I. non-volatile firmware

II. Volatile firmware

III. Software stored on a small memory chip on motherboard

A Only I

B Only II

C Only I and III

D Only II and III

Answer: C

Question 82

Which of the following is TRUE?

A Primary memory is non-volatile.

B Secondary memory is volatile

C ROM is non-volatile memory.

D RAM is non-volatile memory

Answer: C

Question 83

Which of the following metal remains in liquid form at room temperature?

- A Cadmium
- B Mercury
- C Germanium
- D Tin

Answer: B

Question 84

Aqua regia is a mixture of _____.

- A dilute hydrochloric acid and concentrated nitric acid
- B dilute sulfuric acid and dilute hydrochloric acid
- C Concentrated sulfuric acid and dilute nitric acid.
- D concentrated hydrochloric acid and concentrated nitric acid

Answer: A

Question 85

In a concave mirror if object is placed at centre of curvature, then image will be _____.

- A virtual
- B erect
- C diminished
- D at the centre of curvature

Answer: D

Question 86

What is the mass of 4 mole of aluminium atoms?

- A 120 grams
- B 108 grams
- C 136 grams
- D 140 grams

Answer: B

Question 87

Which of the following particles were made to fall on a thin gold foil by Ernest Rutherford?

- A Gamma

- B Beta
- C Electron
- D Alpha

Answer: D

Question 88

Which of the following statement(s) is/are TRUE?

- I. Fuse is generally placed in series with the device.
- II. Fuse is generally placed in parallel with the device.
- III. Fuse wire has high melting point.

- A Only I
- B Only II
- C Only I and III
- D Only II and III

Answer: A

Question 89

A rectangular coil of copper wire is rotating in a magnetic field. The direction of the induced current changes once in each?

- A Two revolutions
- B One revolution
- C Half revolution
- D One fourth revolution

Answer: C

Question 90

Noise is measured in which unit?

- A Watt
- B Faraday
- C Pascal
- D Decibel

Answer: D

Question 91

Which of the following vitamin helps in clotting of blood?

- A Vitamin A
- B Vitamin B
- C Vitamin D

D Vitamin K

Answer: D

Question 92

During heavy exercise, breathing rate in an average adult person can increase upto _____ per minute

A 15

B 20

C 25

D 30

Answer: C

Question 93

Why is the colour of human blood red?

A Because of myoglobin

B Because of haemoglobin

C Because of immunoglobulin

D Because of heptoglobin

Answer: B

Question 94

Which of the following statement is INCORRECT?

A Oviparous animal does not give birth to young ones.

B Each sperm is a single cell

C External fertilisation takes place in frog

D Fertilisation is necessary even in asexual reproduction

Answer: D

Question 95

What is the cause of arise of myopia?

A Excessive curvature of the eye lens.

B Eye ball becomes too small.

C Focal length of the eye lens becomes too long.

D Lack of sleep

Answer: A

Question 96

Which of the following multiplies very slowly in comparison to others?

- A Bacteria
- B Virus
- C Fungi
- D Worms

Answer: D

Question 97

The accumulation of non-degradable chemicals progressively at each trophic level is called _____.

- A biological magnification
- B chemical magnification
- C residue magnification
- D No option is correct.

Answer: A

Question 98

Why Taj Mahal is suffering from "Marble Cancer"?

- A Because of sulphur dioxide
- B Because of nitrogen dioxide
- C Because of chlorofluorocarbon
- D Because of carbon dioxide

Answer: D

Question 99

Cancer treatment is done by which of the following noble gas?

- A Helium
- B Radon
- C Krypton
- D Neon

Answer: B

Question 100

How many types of ecological pyramids are present in ecosystem?

- A Two
- B Three
- C Four

D Five

Answer: B

General Engineering (Electrical)

Instructions

For the following questions answer them individually

Question 101

How much time (in sec) will be taken by 40 C of charge to pass through a point in a circuit, if a current of 8 A flows through it?

A 2

B 3

C 4

D 5

Answer: D

Question 102

Four capacitors of 15 mF are connected in parallel. What is the equivalent capacitance (in mF) of the combination?

A 60

B 65

C 70

D 75

Answer: A

Question 103

At 20 degree Celsius, aluminium wire has a resistance of 30 ohms. The temperature coefficient of resistance is 0.00305 per degree Celsius. What is the approximate resistance of the wire (in ohms) at 30 degree Celsius?

A 28

B 31

C 35

D 45

Answer: B

Question 104

On which supply does the appliances based on heating effect of electric current work?

A AC

B DC

C Both AC and DC

D None of these

Answer: C

Question 105

Find the resistivity of a material (in Ohms-cm) of wire whose resistance is 5 ohms. (Assume length of the wire is 15 m, diameter of wire is 0.15 cm)

A 5.87×10^{-5}

B 5.87×10^{-7}

C 7.87×10^{-5}

D 7.87×10^{-7}

Answer: A

Question 106

The two metal plates having an area of 50 sq. m are separated by a dielectric material having thickness of 4 mm and relative permittivity of 9. Calculate the capacitance (in micro-Farad) across the metal plates.

A 0.5

B 0.996

C 1.76

D 2.1

Answer: B

Question 107

A choke of 20 H carries a current of 600 mA. Calculate the energy stored (in J) in form of magnetic field by the choke.

A 0.5

B 1.2

C 2.5

D 3.6

Answer: D

Question 108

Three electric lamps of 70 W each are connected in parallel across AC mains. What is the total power consumed (in W) by the parallel combination?

A 70

B 140

C 210

D 380

Answer: C

Question 109

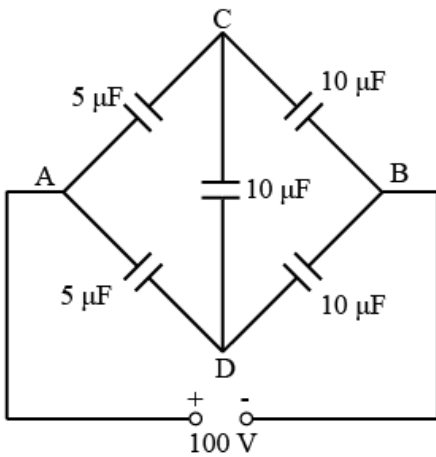
The dimensions of a cuboidal metal strip are $a=5\text{cm}$, $b=15\text{cm}$ and $c=10\text{cm}$ What is the ratio of resistances $R_1 : R_2 : R_3$ between the respective pairs of opposite faces?

- A 1:3:5
- B 1:3:2
- C 1:9:4
- D 1:9:16

Answer: C

Question 110

Calculate the equivalent capacitance (in μF) between point A and B.



- A 6.7
- B 8.7
- C 9.7
- D 1.7

Answer: A

Question 111

What is the efficiency (in %) of the circuit, when the maximum power is delivered to the load?

- A 40
- B 50
- C 70
- D 80

Answer: B

Question 112

In which combination, the electrical appliances are connected at home?

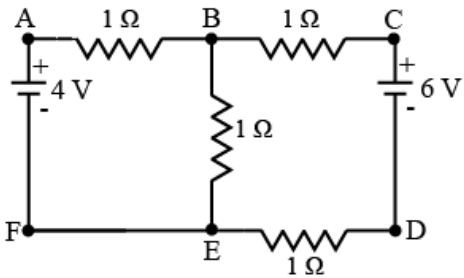
- A Series

- B Parallel
- C Series-parallel
- D None of these

Answer: B

Question 113

How many nodes and junctions are present respectively in the circuit shown below?

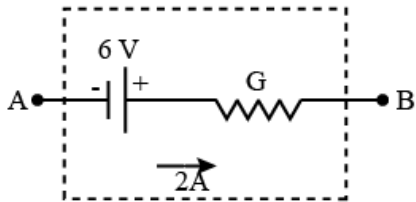


- A 5,2
- B 5,5
- C 2,2
- D 2,5

Answer: A

Question 114

For the figure shown below, find the value of conductance 'G' (in S)

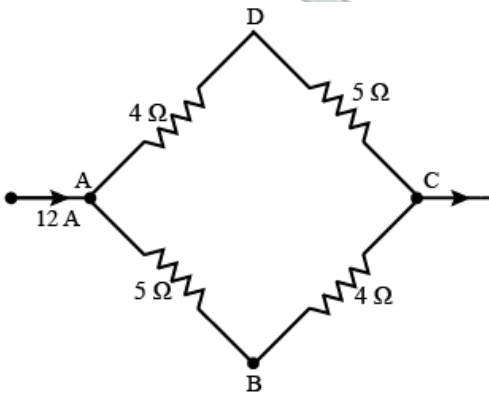


- A 0.33
- B 3
- C 6
- D 10

Answer: A

Question 115

Determine the potential difference (in V) between nodes B and D.



- A -5
- B 5
- C -6
- D 6

Answer: C

Question 116

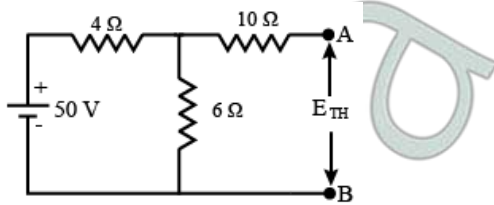
The open circuit voltage across the load terminals is 30 V. The terminal voltage drops to 20 V, when the load of 15 ohms is connected across the open circuited terminals. What is the internal resistance (in ohms) of the source?

- A 5.5
- B 6
- C 7
- D 7.5

Answer: D

Question 117

For the circuit shown below, what is the value of Thevenin's equivalent voltage (in V) across the terminals A-B?



- A 20
- B 30
- C 40
- D 44

Answer: B

Question 118

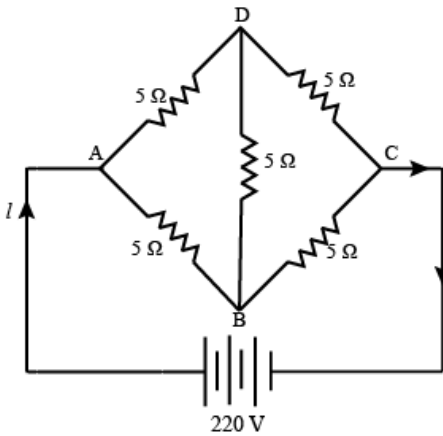
At the maximum power transfer condition, the power transferred to the load is 70 W. What is the total power (in W) generated by the voltage source?

- A 135
- B 138
- C 140
- D 144

Answer: D

Question 119

Determine the current 'I' (in A) delivered by the source in the circuit given below

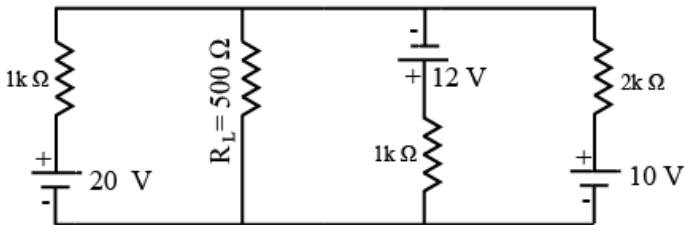


- A 35
- B 38
- C 42
- D 44

Answer: D

Question 120

Find the current (in mA) flowing through the load resistance R_L



- A 5.7
- B 6.7
- C 10.7
- D 12.7

Answer: A

Question 121

Which of the following statement is TRUE about the magnetic reluctivity?

- A Reluctivity is the reciprocal of reluctance.
- B Reluctivity is the reciprocal of susceptibility.
- C Reluctivity is the reciprocal of permeance
- D Reluctivity is the reciprocal of permeability.

Answer: D

Question 122

Which of the following expression satisfies the Ampere's circuital law?

- A $\oint B \cdot dl = \mu_0 \sum i$
- B $\oint B \cdot dl = \mu_0 \sum i^2$
- C $\oint B \cdot dl = \mu_0 \sum H$
- D $\oint B \cdot dl = \mu_0 \sum H^2$

Answer: A

Question 123

The ratio of total flux linkage to used flux is known as

- A flux gain factor
- B flux leakage factor
- C field gain factor
- D field leakage factor

Answer: B

Question 124

Magnetic flux per unit areas called

- A permeability
- B susceptibility
- C magnetic flux density
- D reluctivity

Answer: C

Question 125

What will be the permeance (in H) of a coil, when the flux through the coil is 50 Wb and the value of produced mmf is 25 Amp-turns?

- A 6

B 4

C 3

D 2

Answer: D

Question 126

What will be the current (in A) through a solenoid, when the solenoid has 160 turns and produces an mmf of 32 Amp-turns?

A 0.1

B 0.2

C 0.4

D 0.8

Answer: B

Question 127

Determine the magnetic field strength (in A-turns/m) when the intensity of magnetization of the material is 0.078 A-turns/metre and the magnetic susceptibility of the material is 0.0013.

A 60

B 40

C 50

D 20

Answer: A

Question 128

What will be the value of coupling factor between two coils, when the self-inductance of each coil is 30 mH and the mutual inductance between them is 60mH?

A 6

B 3

C 2

D 1

Answer: C

Question 129

Determine the eddy current loss (in W) in a material having eddy current coefficient of 1, thickness of 0.04 m and volume of 2 cubic metre which is kept in a magnetic field having a maximum flux density of 4 T and supplied by a frequency of 50 Hz.

A 140

B 128

C 108

D 100
Answer: B

Question 130

What will be value of magnetic field (in mT) at the centre of a 7 m long coil, when the coil has 230 turns and carrying a current of 3 A?

- A 0.426
- B 0.435
- C 0.265
- D 0.124

Answer: D

Question 131

Which of the following is the expression for quality factor of parallel RLC circuit?

- A $\frac{1}{R} \sqrt{\frac{L}{C}}$
- B $\frac{1}{L} \sqrt{\frac{R}{C}}$
- C $R \sqrt{\frac{C}{L}}$
- D $C \sqrt{\frac{R}{L}}$

Answer: C

Question 132

At resonant frequency, the impedance of the series RLC circuit is

- A purely resistive
- B purely inductive
- C purely capacitive
- D zero

Answer: A

Question 133

Which of the following represents the relation between the peak and average value of current for a sine wave?

- A $I_{avg} = 0.7071 I_p$
- B $I_{avg} = 1.4141 I_p$
- C $I_{avg} = 0.8741 I_p$
- D $I_{avg} = 0.6371 I_p$

Answer: D

Question 134

In a parallel resonant circuit, the input impedance of the circuit is

- A maximum
- B minimum
- C zero
- D infinite

Answer: A

Question 135

Determine the average value of alternating current (in A) when the peak value of current is 14 A.

- A 8.92
- B 6.56
- C 4.26
- D 2.94

Answer: A

Question 136

What will be the total impedance (in Ohms) of a series RLC circuit, when the resistance of the circuit is 12 ohms, capacitive reactance of the circuit is 3 Ohms and the inductive reactance of the circuit is 8 Ohms connected in series with a 220 V, 50 Hz supply?

- A 10
- B 12
- C 13
- D 15

Answer: C

Question 137

Determine the capacitive reactance (in Ohms) of a series resonant circuit, when the circuit is supplied by a frequency of 50 Hz and having a capacitance 0.043 mF

- A 65.65
- B 79.62
- C 82.26
- D 84.64

Answer: B

Question 138

What will be the resonant frequency (in kHz) of a tank circuit, when the capacitance and inductance of the circuit is 0.06 mF and 0.06 mH respectively?

- A 1.45
- B 1.85
- C 2.65
- D 3.25

Answer: C

Question 139

Calculate the value of capacitance (in mF) connected in parallel with a inductance of 3 H, when the resonant frequency of the circuit is 4 rad/sec.

- A 12.63
- B 15.62
- C 18.55
- D 20.83

Answer: B

Question 140

What will be the transient time (in seconds) of a series RC circuit, when the capacitance of the circuit is 8 mF and the resistance of the circuit is 8 kilo ohms?

- A 64
- B 52
- C 44
- D 36

Answer: A

Question 141

Which of the following is the CORRECT expression for the series resistance required to convert a galvanometer (having internal resistance 'G') into voltmeter?

- A $\frac{V}{i_g} - G$
- B $\frac{V}{G} - i_g$
- C $\frac{i_g}{V} - G$
- D $\frac{V}{i_g} + G$

Answer: A

Question 142

De Sauty's Bridge is most suitable for the measurement of

- A resistance

- B inductance
- C capacitance
- D frequency

Answer: C

Question 143

Which of the following is NOT a component of a CRO?

- A Electron gun
- B Deflection plate system
- C Fluorescent screen
- D Motor

Answer: D

Question 144

A wattmeter is used to measure

- A only AC power
- B only DC power
- C both AC and DC power
- D both AC and DC Voltage

Answer: C

Question 145

Determine the deflection factor (in V/m) of a CRO, when the deflection sensitivity of the CRO is 4 m/V.

- A 0.2
- B 0.25
- C 0.35
- D 0.45

Answer: B

Question 146

Determine the value of current (in mA) for the full-scale deflection of a voltmeter, when the sensitivity of the voltmeter is 50 Ohms/Volt.

- A 1
- B 2
- C 10
- D 20

Answer: D

Question 147

Determine the fastest rise time (in ms) of a sine wave that is reproduced by a CRO, when the bandwidth of the sine wave is 50 Hz.

- A 7
- B 6
- C 5
- D 3

Answer: A

Question 148

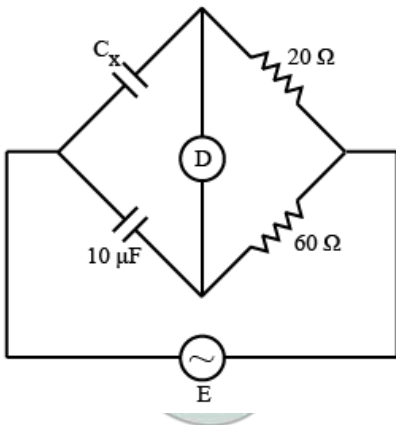
Determine the value of shunt resistance (in Ohms) required to convert a galvanometer into ammeter of reading up to 14 A, when the internal resistance of the galvanometer is 27 Ohms and the value of current for full scale deflection is 0.5 A.

- A 4
- B 2
- C 1
- D 0

Answer: C

Question 149

Calculate the value of unknown capacitance C_x in μF for the circuit given below, when no current flows through the detector (D).



- A 30
- B 40
- C 50
- D 60

Answer: A

Question 150

Calculate the value of reactive power (in VAR) of a circuit having power factor of 0.8, when the apparent power of the circuit is 200 VA.

- A 100

- B 120
- C 140
- D 160

Answer: B

Question 151

A consideration of the power losses in electrical machines is essential for which of the following reasons

- A Operating cost
- B Temperature rise
- C Voltage drops
- D All options are correct

Answer: D

Question 152

The flux is maximum in the following part of a dc motor

- A pole core
- B under the interpole
- C under leading pole tip
- D under trailing pole tip

Answer: B

Question 153

In DC machine torque is proportional to

- A flux
- B armature current
- C both flux & armature current
- D None of these

Answer: C

Question 154

Permanent magnet excitation is also known as

- A shunt excitation
- B series excitation
- C separate excitation
- D compound excitation

Answer: C

Question 155

The functions of inter poles are

- A nullify reactance voltage
- B reduce cross magnetization effect
- C nullify reactance voltage and reduce cross magnetization effect both
- D None of these

Answer: C

Question 156

A 10KVA auto transformer, turn ratio is 0.4. Find the power transferred inductively

- A 4kVA
- B 6kVA
- C 10kVA
- D 0kVA

Answer: B

Question 157

On Parallel operation of two or more transformers the percentage impedance of transformers should be

- A Such that actual impedance of all transformers would be same
- B same
- C proportionate to MVA rating of transformers
- D inversely proportional to MVA rating of transformers

Answer: C

Question 158

The power is supplied to the rotating device in an induction motor by means of

- A Electromagnetic induction
- B Magnetic induction
- C Ferro Magnetic induction
- D Faraday's law of electromagnetic induction

Answer: D

Question 159

The principle of operation of a 3-phase induction motor is most similar to that of

- A synchronous motor
- B capacitor-start induction run motor

- C repulsion-start induction motor
- D transformer with a shorted secondary

Answer: D

Question 160

If the supply frequency to the stator is reduced the Induction motor goes to

- A increase the torque
- B Regenerative braking
- C stator magnetic breaking
- D increasing speed of rotor

Answer: B

Question 161

The direction of rotation of hysteresis motor is reversed by

- A Shift shaded pole with respect to main pole
- B Reversing supply lead
- C Either A or B
- D Neither A nor B

Answer: A

Question 162

If the centrifugal switch of a two-value capacitor motor using two capacitors fails to open then

- A motor will not come up to speed
- B motor will not carry the load
- C current drawn by the motor will be excessively high
- D electrolytic capacitor will, in all probability, suffer break down

Answer: D

Question 163

In a capacitor start single-phase motor, when capacitor is replaced by a resistance

- A torque will increase
- B the motor will consume less power
- C motor will run in reverse direction
- D motor will continue to run in same direction

Answer: D

Question 164

Locked rotor current of a shaded pole motor is

- A equal to full load current
- B less than full load current
- C slightly more than full load current
- D none of the above

Answer: C

Question 165

Theory involved in analysis of the performance of single phase induction motor is

- A Doublefield revolving theory
- B crossfield theory
- C Double field revolving theory and crossfield theory both
- D None of these

Answer: C

Question 166

Hysteresis motor is particularly useful for high-quality record players and tape recorders because

- A it revolves synchronously
- B it is not subject to any magnetic or mechanical vibrations
- C it can be easily manufactured in extremely small sizes
- D it develops hysteresis torque which is extremely steady both in amplitude and phase

Answer: D

Question 167

For the transmission line, if booster transformers are to be used, preferred location will be

- A at the receiving end
- B at the sending end
- C at the intermediate point
- D anywhere in the line

Answer: C

Question 168

Wooden poles are not used because

- A they easily rot below the ground level and limited to line voltage of 11 kV
- B light in weight

C can easily be fitted and shifted

D cheap in cost

Answer: B

Question 169

Electro-mechanical voltage regulators generally find applications in

A generators

B transformers

C reactors

D All options are correct

Answer: A

Question 170

The material for armoring on cable is usually

A galvanised steel wire

B steel tape

C Both galvanised steel wire and steel tape

D None of these

Answer: C

Question 171

Towers are used in

A distribution

B transmission

C telephone

D streetlight

Answer: B

Question 172

Different types of relays are used in control circuits. They operate under predetermined conditions to fulfill the control requirement. Some relays are capable of operating with time-delay. Which one of the following is used as time delay relay?

A Reed relay

B Electromagnetic relay

C Clapper type armature relay

D Thermal relay

Answer: D

Question 173

Bucholz relay protects the transformer from

- A internal faults
- B external faults
- C both internal and external faults
- D short circuit fault

Answer: A

Question 174

Insulation resistance is measured by

- A ohm meter
- B ammeter
- C voltmeter
- D Megger

Answer: D

Question 175

What is the meaning of sweep in case of ceiling fan

- A current rating
- B voltage rating
- C blade size
- D power rating

Answer: C

Question 176

The operation of distance relay depends upon

- A distance only
- B ratio of current to voltage
- C current only
- D ratio of voltage to current

Answer: D

Question 177

The underground system cannot be operated above

- A 440kv
- B 11kv

C 33kv

D 666kv

Answer: D

Question 178

HRC fuse means

A High resistance capacitance fuse

B High range capacity fuse

C High rupturing capacity fuse

D High ratio cartridge fuse

Answer: C

Question 179

How will you change the rotation of dc shunt motor

A change the field terminal

B change the supply terminal

C change the armature terminal

D any 1 or 3

Answer: D

Question 180

How will you convert galvanometer into ammeter?

A low resistance parallel with galvanometer

B low resistance series with galvanometer

C high resistance parallel with galvanometer

D high resistance series with galvanometer

Answer: A

Question 181

For which of the following DC motors, is the typical field of application mentioned?

A Shunt motor: Electric trains

B Series motor : Machine tools

C Series motor: Belt drive

D Compound motor: Fly wheel drive

Answer: D

Question 182

High pressure mercury discharge lamps are not used in

- A park
- B in the street lights of play grounds
- C stage lighting
- D drawing room

Answer: D

Question 183

Which of the following lamp gives nearly monochromatic light?

- A Sodium vapour lamp
- B GLS lamp
- C Tubelight
- D Mercury vapour lamp

Answer: A

Question 184

Power factor is highest in case of

- A Mercury arc lamp
- B Sodium vapour lamps
- C Tubelights
- D GLS lamps

Answer: D

Question 185

The process of heat transfer during the re-entry of satellites and missiles at very high speeds, into earth's atmosphere is known as

- A Ablation
- B Radiation
- C Viscous dissipation
- D Irradiation

Answer: A

Question 186

A pole-changing squirrel cage induction motor employed in derricks has four, eight and twenty four pole. The lowest speed is used in

- A hoisting
- B landing the load

C lifting

D lowering

Answer: B

Question 187

- In heating the ferro-magnetic materials by induction heating, heat is produced owing to

A Flow of induced current through the charge.

B Hysteresis loss occurring below Curie temperature.

C Hysteresis loss as well as eddy current loss occurring in the charge.

D Any of the factors given in the options.

Answer: C

Question 188

A 30kW rated output, 400V, 3 phase delta connected, 4-pole, 50 Hz induction motor full load slip of 5%. If the ratio of standstill reactance to resistance per rotor phase is 4 estimate the full load speed.

A 1425 rpm

B 1500 rpm

C 1350 rpm

D 1625 rpm

Answer: A

Question 189

The conduction band is

A the region of free electrons

B a range of energies corresponding to the energies of the free electrons

C always above the forbidden energy level

D concentrated holes for the flow of current

Answer: C

Question 190

The motor that is used for intermittent, high torque loads is

A DC shunt motor

B DC series motor

C differential compound motor

D cumulative compound motor

Answer: D

Question 191

IDC in a full wave rectifier is

- A $\frac{2I_m}{\pi}$
- B $\frac{I_m}{\pi}$
- C $\frac{I_m}{2\pi}$
- D $\frac{4I_m}{\pi}$

Answer: A

Question 192

The relationship between α and β factors of a transistor can be defined as

- A $\beta = \frac{\alpha}{1-\alpha}$
- B $\alpha = \frac{\beta}{\beta-1}$
- C $\alpha\beta = 1$
- D $\beta = \frac{\alpha}{\alpha-1}$

Answer: A

Question 193

The operating point is also called the

- A cut-off point
- B quiescent point
- C saturation point
- D None of these

Answer: B

Question 194

The input impedance of an amplifier is

- A $\frac{V_{inp}}{I_{out}-I_{inp}}$
- B $\frac{V_{in}}{I_{out}}$
- C $\frac{V_{in}}{I_{in}}$
- D $\frac{V_{out}}{I_{in}}$

Answer: C

Question 195

The speed regulation of a synchronous motor is always

- A 0.005
- B 0.01
- C zero
- D positive

Answer: C

Question 196

In a synchronous motor, at constant loading condition, if the excitation is increased its power factor becomes

- A more
- B less
- C constant
- D no change

Answer: B

Question 197

If excitation of a synchronous motor running with a constant load is decreased from its normal value, it leads to

- A increase in both armature current and power factor angle
- B increase in both armature current and power factor which is lagging
- C increase in back e.m.f. but decrease in armature current
- D increase in torque angle but decrease in back e.m.f.

Answer: A

Question 198

At leading power factor the induced e.m.f. in a synchronous motor will be

- A equal to the supply voltage
- B less than the supply voltage
- C more than the supply voltage
- D None of these

Answer: C

Question 199

A synchronous motor can be started by

- A providing damper winding
- B D.C. compound motor
- C pony motor
- D any of the options

Answer: D

Question 200

In a synchronous motor, the torque angle is the angle between

- A** magnetizing current and back e.m.f.
- B** the rotating stator flux and rotor poles
- C** the supply voltage and the back e.m.f.
- D** None of these

Answer: B

