



## SSC JE Electrical Engineering 23rd Jan 2018 Shift-2

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# General Intelligence and Reasoning

## Instructions

For the following questions answer them individually

### Question 1

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

Heart : Organ :: ? : ?

- A Bus : Vehicle
- B Car : Road
- C Ship : Sea
- D Train : Rail

Answer: A

### Question 2

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

Big : Small :: Solid : ?

- A Metal
- B Liquid
- C Smoke
- D Cold

Answer: B

### Question 3

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

Calculator : Calculations :: Scale : ?

- A Inches
- B Centimeters
- C Measure
- D Steel

Answer: C

### Question 4

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

MUFT : PXIW :: GONE : ?

- A HMRL
- B JSPA
- C JRQH
- D HQRF

Answer: C

**Question 5**

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

**PINK : TMRO :: SOLD : ?**

- A HQT X
- B WSPH
- C HAQV
- D AQBH

**Answer: B**

**Question 6**

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

**SW : VA :: LT : ?**

- A NY
- B LA
- C OX
- D OL

**Answer: C**

**Question 7**

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

**19 : 363 :: ? : ?**

- A 16 : 259
- B 13 : 171
- C 14 : 199
- D 14 : 195

**Answer: B**

**Question 8**

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

**42 : 105 :: 38 : ?**

- A 111
- B 135
- C 95
- D 83

**Answer: C**

**Question 9**

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

24 : 39 :: 49 : ?

- A 68
- B 64
- C 69
- D 79

**Answer: B**

**Question 10**

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

- A Liver
- B Intestine
- C Organ
- D Lungs

**Answer: C**

**Question 11**

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

- A Black
- B Yellow
- C Rainbow
- D Pink

**Answer: C**

**Question 12**

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

- A Arteries
- B Veins
- C Hand
- D Bones

**Answer: C**

**Question 13**

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

- A RLF

- B MGA
- C EYR
- D HBV

Answer: C

**Question 14**

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

- A IR
- B KP
- C GT
- D OV

Answer: D

**Question 15**

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

- A XTQMJ
- B FBYUR
- C GCZVS
- D TPMIE

Answer: D

**Question 16**

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

- A 4 - 21
- B 7 - 54
- C 6 - 41
- D 3 - 16

Answer: D

**Question 17**

In the following question, select the odd number pair from the given alternatives.

- A 11 - 17
- B 23 - 31
- C 43 - 59
- D 41 - 47

Answer: C

**Question 18**

In the following question, select the odd number pair from the given alternatives.

- A 12 - 156
- B 13 - 182
- C 14 - 210
- D 15 - 230

**Answer: D**

**Question 19**

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

1. Shocking
2. Shiver
3. Shelter
4. Shorten
5. Shudder

- A 23145
- B 32145
- C 14523
- D 41523

**Answer: B**

**Question 20**

According to dictionary, which of the following word will come at LAST position?

1. Operation
2. Orderly
3. Openly
4. Opulent
5. Oral

- A Oral
- B Orderly
- C Opulent
- D Operation

**Answer: B**

**Question 21**

From the given alternatives, according to dictionary, which word will come at THIRD position?

- A Passage
- B Pastime
- C Patience

D Pathetic

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.

AGM, FLR, KQW, PVB, ?

A UAG

B VLC

C CGN

D PNO

Answer: A

**Question 23**

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

FROM, CNLI, ZJIE, WFFA, ?

A ACNG

B TCCX

C TBCW

D FRIP

Answer: C

**Question 24**

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

TRO, PNK, LJG, ?, DBY

A FBC

B FNB

C FRN

D HFC

Answer: D

**Question 25**

In the following question, select the missing number from the given series.

11, 16, 21, 13, 19, 25, 15, 22, 29, ?, 25

A 18

B 17

C 19

D 21

Answer: B

Question 26

In the following question, select the missing number from the given series.  
2112, 2328, 2671, 3183, ?, 4912

A 3826

B 3742

C 3912

D 3992

Answer: C

Question 27

In the following question, select the missing number from the given series.  
21, 22, 34.5, 71, 180, 543, ?

A 1864

B 2234

C 2336

D 1904

Answer: D

Question 28

M is 2 years older than P. L is 2 years older than O. O's age is the average of the ages of L and N, P's age is the average of the ages of L and M and L's age is the average of P and O. Who is the youngest?

A L

B M

C N

D O

Answer: C

Question 29

X said to Y that your mother's father-in-law's wife is mother-in-law of my father.  
How are X and Y related?

A X is sister's husband of Y

B X is child of Y's father's sister

C Y is father's brother of X

D Y is sister's husband of X

Answer: B



**Question 30**

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

**GEOGRAPHIC**

- A cheap
- B rogue
- C price
- D graph

**Answer: B**

**Question 31**

If **BANQUET** is coded as **ZYLOSCR**, then how will **NEW** be coded as?

- A MVD
- B MDV
- C LCU
- D OFX

**Answer: C**

**Question 32**

In a certain code language, **9124** means 'run around the block', **2548** means 'don't block the path' and **4763** means 'chock a block full'. Find the code for 'the'.

- A 1
- B 9
- C 2
- D 4

**Answer: C**

**Question 33**

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

$$90 \times 10 \div 25 - 5 + 50 = ?$$

- A 81
- B 84
- C 100
- D 48

**Answer: B**

Question 34

If  $11 @ 7 = 2$ ,  $18 @ 0 = 9$  and  $22 @ 20 = 1$ , then find the value of  $16 @ 10 = ?$

- A 6
- B 160
- C 26
- D 3

Answer: C

Question 35

If  $A * B$  means A is father of B,  $A + B$  means A is sister of B and If  $A \% B$  means A is daughter of B, then what does  $C * D \% E + F$  mean?

- A C is F's husband
- B C is F's wife's brother
- C C is father of F
- D C is F's sister's husband

Answer: D

Question 36

Select the missing number from the given responses.

<b>8</b>	<b>10</b>	<b>2</b>
<b>9</b>	<b>?</b>	<b>8</b>
<b>17</b>	<b>19</b>	<b>10</b>

- A 1
- B 9
- C -1
- D -9

Answer: B

Question 37

Which of the following terms follows the trend of the given list?  
CABABABAB, ACBABABAB, ABCABABAB, ABACBABAB, ABABCABAB, \_\_\_\_\_.

- A ABABABACB
- B ABABABCAB
- C ABABACBAB
- D ABABABABC

Answer: C

**Question 38**

A ship starts from the port and sails 43 miles East, then it turns South and sails 17 miles, then it turns West and sails 25 miles, then it turns to its right and sails 17 miles. Where is it with respect to the port from where it started?

- A 18 miles West
- B 68 miles East
- C 18 miles East
- D 68 miles West

**Answer: C**

**Question 39**

Two planes start from the same strip. Plane P flies 15 miles West, then turns left flies 22 miles and lands. In the meanwhile plane Q flies 7 miles South, then flies 11 miles East, then turns to its right, flies 15 miles and lands. Where is plane Q with respect to plane P?

- A 26 miles East
- B 26 miles West
- C 4 miles East
- D 4 miles West

**Answer: A**

**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: All officers are mothers**

**Statement II: Some doctors are mothers**

**Conclusion I: All doctors are mothers**

**Conclusion II: Some mothers are officers**

- 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: B**

**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: All desert is jungle**

**Statement II: All sand is desert**

**Statement III: No trees are jungle**

**Conclusion I: No trees are desert**

**Conclusion II: No sand is trees**

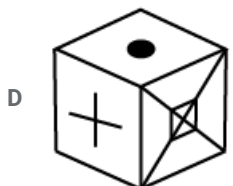
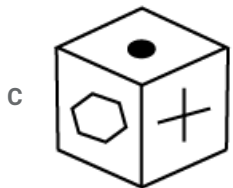
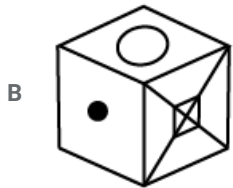
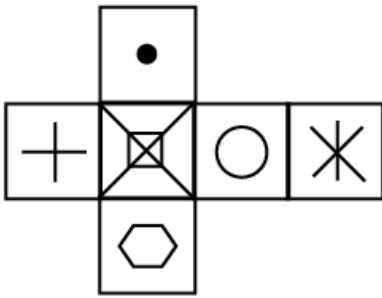
**Conclusion III: All jungle is sand**

- A Only conclusion I follows
- B Only conclusion II follows
- C Only conclusions I and II follow
- D None of the conclusions follow

Answer: C

Question 42

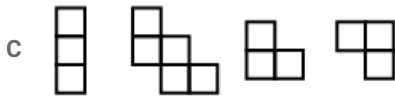
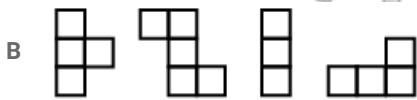
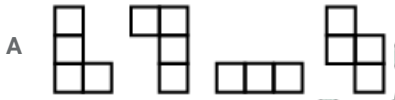
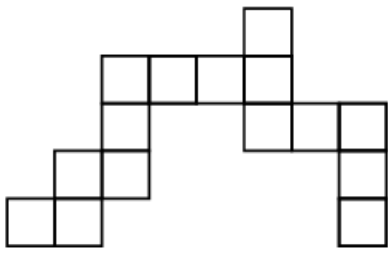
Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure ?



Answer: C

Question 43

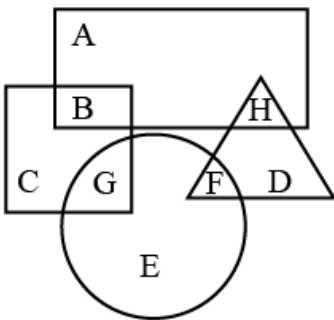
Which of the following figure patterns can be combined to make the question figure ?



Answer: A

Question 44

In the following figure, square represents Artists, triangle represents Military officers, circle represents Collectors, and rectangle represents Fathers. Which set of letters represents collectors who are either military officers or fathers ?



A H

B B

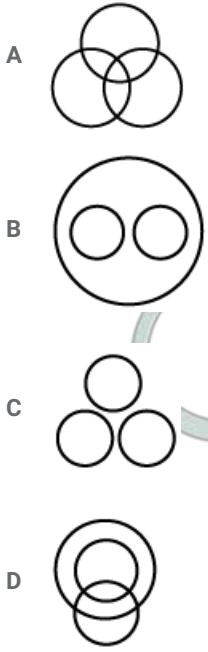
C G

D F

Answer: D

Question 45

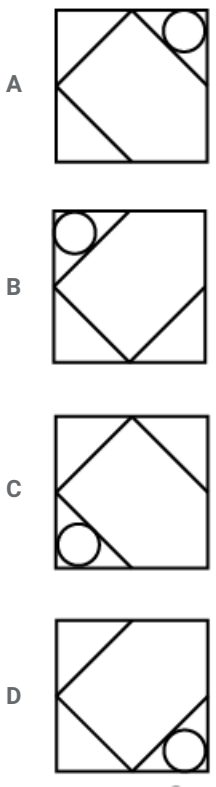
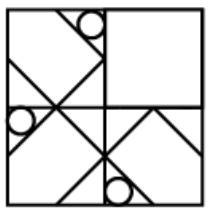
Which of the following venn diagrams represents the relationship between Women, Mothers and Teachers ?



Answer: D

Question 46

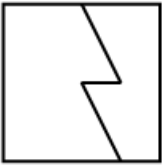
Which of the following figure will complete the pattern in the question figure ?



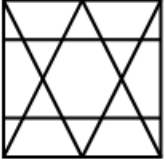
Answer: D

Question 47

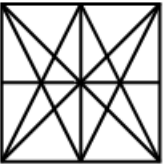
From the given answer figures, select the one in which the question figure is hidden/embedded.



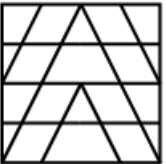
A



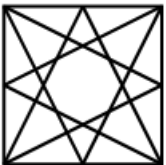
B



C



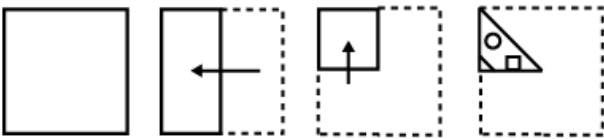
D



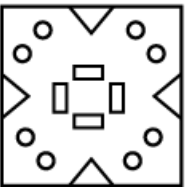
Answer: C

Question 48

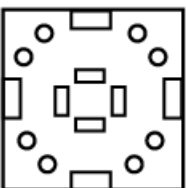
A piece of paper is folded and punched as shown-below in the question figures, indicate how it will appear when opened.

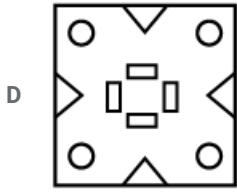
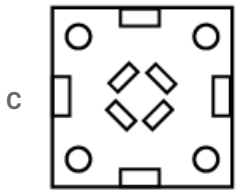


A



B

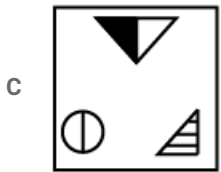
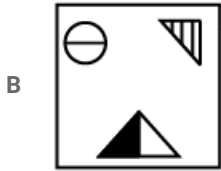
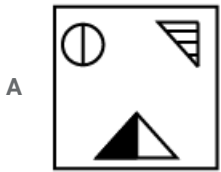
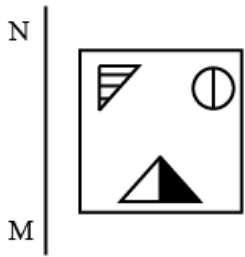




Answer: A

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: A



Question 50

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example 'H' can be represented by 21, 43 etc and 'R' can be represented by 96, 87 etc. Similarly, you have to identify the set for the word 'POEM'.

Matrix I					
	0	1	2	3	4
0	A	A	L	A	B
1	C	A	F	B	C
2	J	H	F	B	K
3	F	J	A	M	L
4	I	B	B	H	E

Matrix II					
	5	6	7	8	9
5	Q	U	Y	N	Z
6	N	R	V	O	Z
7	P	N	Q	W	Q
8	X	N	R	V	V
9	X	R	V	T	O

- A 76,69,01,33
- B 56,88,23,41
- C 89,56,44,02
- D 75,68,44,33

Answer: D

## General Awareness

**Instructions**

For the following questions answer them individually

**Question 51**

Depreciation of fixed assets is an example of \_\_\_\_\_.

- A deferred revenue expenditure
- B capital expenditure
- C capital gain
- D revenue expenditure

Answer: B

**Question 52**

Which one of the following is not a feature of monopolistic competition?

- A Large number of buyers and sellers in the market
- B Differentiated products constitute the market
- C Product in the market is homogeneous
- D Selling costs are used for sale promotion

Answer: C

**Question 53**

What is the maximum loan amount permissible under the MUDRA Yojana?

- A Rs. 50,000
- B Rs. 1 lakh
- C Rs. 5 lakh
- D Rs. 10 lakh

**Answer: D**

**Question 54**

**As per a latest classification of countries by the World Bank India now belongs to which of the following category?**

- A Upper-lower income country
- B Lower-middle income country
- C Middle-middle income country
- D Lower-upper income country

**Answer: B**

**Question 55**

**As per census 2011, which state had the lowest sex ratio?**

- A Punjab
- B Haryana
- C Uttar Pradesh
- D Bihar

**Answer: B**

**Question 56**

**Pluralist Theory of Sovereignty emphasizes the importance of which of the followings?**

- A Association
- B Monarch
- C State
- D Government

**Answer: A**

**Question 57**

**In which of the following countries the system of judicial review was originated?**

- A France
- B Germany

C USA

D Britain

**Answer: C**

**Question 58**

**Under which article of the Indian Constitution is the District Planning Commission constituted?**

A Article 243 ZD

B Article 244 ZD

C Article 242 ZD

D Article 243 ZE

**Answer: A**

**Question 59**

**Which kind of majority is required for constitutional amendment in forming a new state?**

A Simple

B Two-third

C Three-fourth

D Two-third plus ratification by half of all states

**Answer: A**

**Question 60**

**Which officer of the Government of India has the right to take part in the proceedings of parliament of India even though he is not a member?**

A Vice-President

B Attorney General of India

C Comptroller and Auditor General

D Election Commission

**Answer: B**

**Question 61**

**The term 'Stupa' is associated with which of the following event of Gautam Buddha's life?**

A Death

B First Sermon

C Birth

D Renunciation

Answer: A

**Question 62**

Who was the last ruler of the Gupta Dynasty?

- A Puru Gupta
- B Vishnu Gupta
- C Skanda Gupta
- D Kumar Gupta

Answer: B

**Question 63**

Where was Guru Govind Singh educated and learnt Persian?

- A Lahore
- B Amritsar
- C Patna
- D Anandpur Sahib

Answer: D

**Question 64**

Which of the following was the precursor of Indian National Congress?

- A Servents of Indian Society
- B Indian Association
- C Indian National Union
- D Indian League

Answer: B

**Question 65**

During which governor general's time was the annexation of Sindh in British State done?

- A Lord Dalhousie
- B Lord Chelmsford
- C Lord Ellenborough
- D Lord Hastings

Answer: C

**Question 66**

What is the second most abundant element on Earth's crust?

- A Carbon
- B Silicon
- C Oxygen
- D Hydrogen

**Answer: B**

**Question 67**

**What is called a shallow stretch of river that may be crossed on feet.?**

- A Ford
- B Atoll
- C Reef
- D Lagoon

**Answer: A**

**Question 68**

**Which among the following is a cold-dry wind?**

- A Hurricane
- B Tornado
- C Bora
- D Cyclone

**Answer: C**

**Question 69**

**The man-made reservoir Gobind Sagar located in Bilaspur is situated in which of the following states?**

- A Uttarakhand
- B Uttar Pradesh
- C Punjab
- D Himachal Pradesh

**Answer: D**

**Question 70**

**Which among the following rivers does not flow from East to West?**

- A Narmada
- B Tapti
- C Cauvery

D Mahi  
Answer: C

**Question 71**

Which of the following historical monument has been chosen as a "Swachh Bharat Icon" by the Union Government on November 21, 2017.

- A Haveli Dharampur
- B Charminar
- C Amaravati
- D Vishwa Bharati

Answer: B

**Question 72**

As per a recent announcement, where will India's first Electronic Manufacturing Cluster (EMC) come up?

- A Andhra Pradesh
- B Maharashtra
- C Rajasthan
- D West Bengal

Answer: A

**Question 73**

Which of the following is a multilevel global campaign to spread awareness about importance of girl's education?

- A Girl Rising
- B Most Important Part of Our Life: Girls
- C Save Girls: Educate Girls
- D Education of Girls

Answer: A

**Question 74**

Which country will host the Summer Olympics 2020?

- A Qatar
- B Tokyo
- C Rome
- D Jakarta

Answer: B

**Question 75**

**Which of the following sportsperson is not correctly matched with their respective discipline?**

- A Jitu Rai : Shooting
- B P.V. Sindhu : Badminton
- C Sakshi Malik : Boxing
- D Deepa Karmakar : Gymnastic

**Answer: C**

**Question 76**

**"A Better India : A Better World" is written by\_\_\_\_\_.**

- A Arun Jaitley
- B Aamer Hussein
- C N. R. Narayan Murthy
- D C. Raja Mohan

**Answer: C**

**Question 77**

**Which among the following has won the Nobel Prize for Chemistry in October 2017?**

- A Jacques Dubochet
- B Joachim Frank
- C Richard Henderson
- D All options are correct.

**Answer: D**

**Question 78**

**On birth anniversary of social reformer Basavana how many volumes of Vachana were released by Narendra Modi in April, 2017?**

- A 21
- B 20
- C 23
- D 25

**Answer: C**

**Question 79**

**In May 2017, with which country India has signed an agreement on Maritime Security?**

- A Sri Lanka
- B Bangladesh
- C Mauritius
- D China

Answer: C

**Question 80**

Which neighbouring country of India measures prosperity by gauging its citizens' happiness level?

- A Pakistan
- B Nepal
- C Sri Lanka
- D Bhutan

Answer: D

**Question 81**

In which communication mode, data can be transmitted in both directions at same time?

- A Simplex
- B Full duplex
- C Half duplex
- D Multiplex

Answer: B

**Question 82**

The computer program that converts assembly language to machine language is called \_\_\_\_\_.

- A Compiler
- B Interpreter
- C Assembler
- D Comparator

Answer: C

**Question 83**

Which is a base metal of amalgam alloy?

- A Aluminium
- B Mercury



C Copper

D Zinc

Answer: B

Question 84

Which of the following is the structure of graphite?

A Rigid three-dimensional

B Hexagonal

C like Football

D No option is correct.

Answer: B

Question 85

A wooden spoon is dipped in a cup of ice cream. Its other end will \_\_\_\_\_.

A become cold by the process of conduction

B become cold by the process of convection

C become cold by the process of radiation

D not become cold

Answer: D

Question 86

Which acid is the most abundant acid found in grapes?

A Oxalic acid

B Ascorbic acid

C Tartaric acid

D Formic acid

Answer: C

Question 87

The splitting of white light into its component colours is called \_\_\_\_\_.

A diffraction

B refraction

C dispersion

D scattering

Answer: C

**Question 88**

Which of the following statements are CORRECT ?

- I. Change in magnetic field produces induced current.
- II. Flow of current in a conductor produces magnetic field.
- III. Magnetic field related to coil can be produced by motion between conductor and coil.

- A Only I and II
- B Only I and III
- C Only II and III
- D All statements are correct.

**Answer: D**

**Question 89**

Which gas is used as a fuel in a rocket?

- A Radon
- B Hydrogen
- C Chlorine
- D Nitrogen

**Answer: B**

**Question 90**

Which of the following is good insulator?

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

**Answer: D**

**Question 91**

Which is the most abundant Vitamin found in carrot?

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

**Answer: A**

**Question 92**

How the rate of absorption of water through roots can be increased?

- A Keeping the plants in the shade
- B Keeping the plants in the dim light
- C Keeping the plants under the fan
- D Covering the plants with a polythene bag

**Answer: C**

**Question 93**

**A spore producing plant is \_\_\_\_\_.**

- A rose
- B bread mould
- C potato
- D ginger

**Answer: B**

**Question 94**

**Which chromosome is responsible for manliness in man?**

- A XO
- B YO
- C XX
- D XY

**Answer: D**

**Question 95**

**The human eye forms the image of an object at its \_\_\_\_\_.**

- A cornea
- B iris
- C pupil
- D retina

**Answer: D**

**Question 96**

**Which of the following is NOT a multicellular organism?**

- A Fungi
- B Spirogyra
- C Hydra
- D Paramecium

Answer: D

**Question 97**

Which disease is caused by cadmium metal pollution?

- A Minamata
- B Itai-Itai
- C Asthma
- D Dermatitis

Answer: B

**Question 98**

Which of the following is an organic gas?

- A Carbon dioxide
- B Carbon monoxide
- C Ethylene dichloride
- D Nitrogen dioxide

Answer: C

**Question 99**

Basel Protocol is related to which of the following?

- A Ozone layer
- B Burning of forests
- C Sea water pollution
- D Trans-boundary hazardous dumping

Answer: D

**Question 100**

Which of the following is parasitic food chain?

- A Trees → Fruits eating birds → Lice and bugs
- B Grass → Rabbit → Fox → Tiger
- C Grass → Grasshopper → Frog → Snake → Hawk
- D Phytoplankton → Zooplankton → Fish → Hawk

Answer: A

## General Engineering (Electrical)

**Instructions**

For the following questions answer them individually

**Question 101**

The S.I unit of electrical energy is

- A Watt
- B Volts
- C Ampere
- D Joule

**Answer: D**

**Question 102**

Which one of the following is the CORRECT expression for the heat generated in a conductor?

- A  $NX$
- B  $RNX$
- C  $\frac{X}{N}$
- D  $N^2X$

**Answer: C**

**Question 103**

Which one of the following statement is TRUE?

- A The equivalent resistance in series combination is larger than the largest resistance in the combination.
- B The equivalent resistance in series combination is smaller than the largest resistance in the combination.
- C The equivalent resistance in series combination is equal to the smallest resistance in the combination.
- D The equivalent resistance in series combination is equal to the largest resistance in the combination.

**Answer: A**

**Question 104**

The resistivity of a conductor depends upon

- A pressure
- B temperature
- C degree of illumination
- D shape of cross-section

**Answer: D**

**Question 105**

Determine the energy (in J) stored by a 0.4 H inductance, if the current flowing through it is 2 A.

- A 1.6
- B 0.8

C 0.4

D 1.4b

Answer: B

Question 106

What will be the voltage (in V) across a 8 H inductor, when the rate of change of current in the inductor is 0.5 A/sec.

A 2

B 6

C 4

D 8

Answer: C

Question 107

What will the equivalent capacitance (in mF) of three capacitors connected in a series having capacitance of 0.04 mF, 0.08 mF and 0.02 mF respectively?

A 0.026

B 0.032

C 0.065

D 0.011

Answer: D

Question 108

- Determine the voltage (in V) of a battery connected to a parallel plate capacitor (filled with air) when the area of the plate is 10 square centimetres, the separation between the plates is 5 mm and the charged stored on the plates is 20 pC.

A 12.3

B 10.3

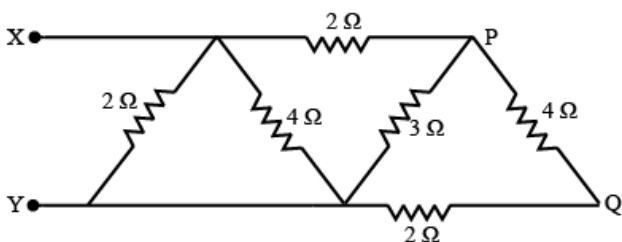
C 11.3

D 14.3

Answer: C

Question 109

What will be the equivalent resistance (in ohms) between the points x and y for the given electrical network?

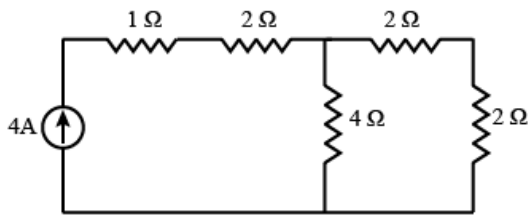


- A 2
- B 1
- C 4
- D 3

Answer: B

**Question 110**

Determine the power delivered (in W) by the current source for the given electrical circuit.



- A 80
- B 40
- C 60
- D 30

Answer: A

**Question 111**

Which one of the following statement is TRUE?

- A Kirchhoff's law is not applicable to circuits with passive elements.
- B Kirchhoff's law is not applicable to circuits with lumped parameters.
- C Kirchhoff's law is not applicable to circuits with non-linear resistances.
- D Kirchhoff's law is not applicable to circuits with distributed elements.

Answer: D

**Question 112**

which of the following is a passive element to an electrical circuit?

- A Current source
- B Voltage source
- C Resistor
- D Battery

Answer: C

**Question 113**

Which one of the following is the mathematical expression of Ohm's law?

- A  $V=I$
- B  $V = \frac{R}{I}$
- C  $V=I-R$
- D  $V=IR$

Answer: D

Question 114

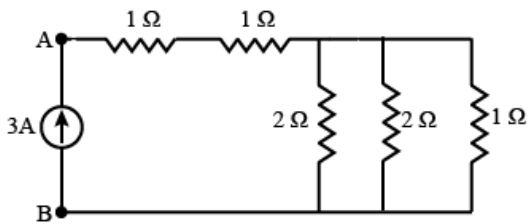
Determine the current (in A) that flows through a 15 ohms resistance, when the potential difference between the terminals of the resistor is 60 V.

- A 3
- B 4
- C 2
- D 6

Answer: B

Question 115

Determine the voltage (in V) across point A and B for the given electrical circuit.

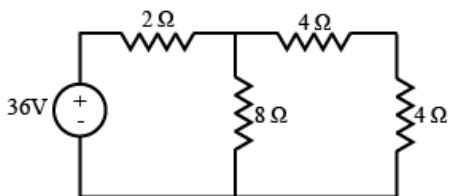


- A 8.4
- B 9.6
- C 7.5
- D 6.5

Answer: C

Question 116

What will be the value of current (in A) flowing through the 8 ohms resistance for the given electrical circuit?



- A 3
- B 2



C 4

D 6

Answer: A

Question 117

Determine the power (in W) dissipated by a 16 ohms resistor, when the potential difference between the ends of the resistor is 32 V.

A 66

B 68

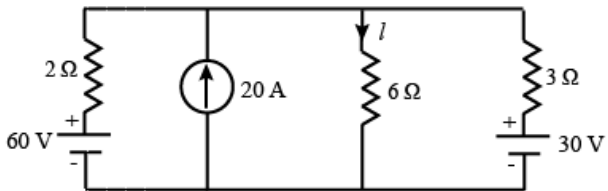
C 62

D 64

Answer: D

Question 118

What will be the value of current  $I$  (in A) for the given electrical circuit?



A 5

B 10

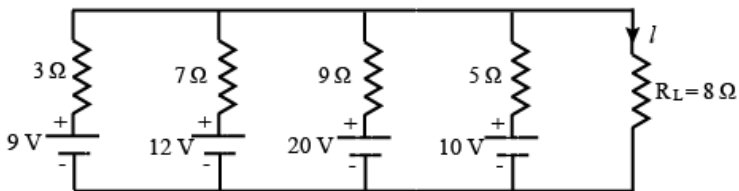
C 15

D 20

Answer: B

Question 119

Determine the value of current  $I$  (in A) through the load resistance for the given electrical circuit.



A 0.33

B 0.85

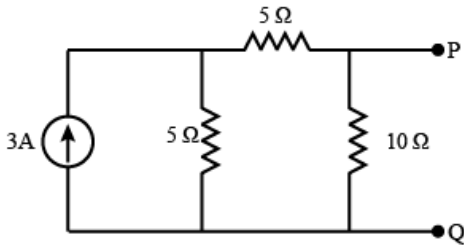
C 1.21

D 2.54

Answer: C

Question 120

Determine the value of current (in A) through 10 ohms resistor, if a source of 8 V with internal resistance 1 ohms is connected at P-Q terminals with positive terminal at P



- A 0.79
- B 0.43
- C 0.45
- D 0.64

Answer: A

Question 121

Which one of the following is the S.I. unit of magnetic field strength?

- A Weber
- B Tesla
- C Ampere-meter
- D Ampere/meter

Answer: D

Question 122

Which one of the following is the CORRECT expression for magnetic susceptibility?

- A  $\frac{B}{H}$
- B  $\frac{I}{H}$
- C  $\frac{\phi}{F_m}$
- D  $\frac{F_m}{\phi}$

Answer: B

Question 123

Which one of the following is the CORRECT value of magnetic permeability in free space?

- A  $4\pi \times 10^{-4}$
- B  $4\pi \times 10^{-5}$
- C  $4\pi \times 10^{-7}$

D  $4\pi \times 10^{-3}$

Answer: C

Question 124

If the magnetic susceptibility of any material is less than zero then the material is .....

A paramagnetic

B ferromagnetic

C diamagnetic

D ferrimagnetic

Answer: C

Question 125

Determine the reluctance (in Amp-turns/Wb) of a coil, when the flux through the coil is 15 Wb and the produced mmf is 30 Amp-turns.

A 4

B 2

C 1

D 3

Answer: B

Question 126

Determine the value of produced mmf (in Amp-turns) in a coil, if the coil has 120 turns and carrying a current of 0.1 A.

A 12

B 14

C 16

D 18

Answer: A

Question 127

What will be the magnetic field strength (in A/m) of a material when the intensity of magnetization of the material is 0.064 Amp/m and the magnetic susceptibility of the material is  $0.52 \times 10^{-4}$ ?

A 1240

B 1265

C 1260

D 1230

Answer: D

Question 128

Determine the magnitude of EMF (in V) induced between the axis of rotation and the rim of the disc, when the disc of radius 10 cm rotates with an angular velocity of 60 revolutions per second and placed in a magnetic field of 3 T acting parallel to the rotation of the disc.

- A 6.69
- B 4.64
- C 6.67
- D 5.65

Answer: D

Question 129

What will be the value of current (in A) in a 50 cm long air-core solenoid, if the value of magnetic field at the center of the solenoid is 5 mT and the solenoid has 300 turns?

- A 6.63
- B 5.63
- C 4.36
- D 8.25

Answer: A

Question 130

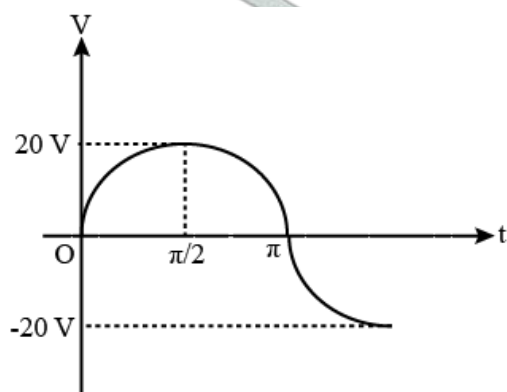
Determine the maximum flux density (in T) of a material having eddy current coefficient of 2, thickness of 4 mm, volume of 20 cu. meter, which is supplied by a frequency of 50 Hz when the material has eddy current loss of 6 W.

- A 2.24
- B 3.34
- C 1.94
- D 1.21

Answer: C

Question 131

What is the root mean square value of the voltage waveform (in V) given in the figure below?



- A 0
- B 12.74
- C 14.14
- D 18.02

Answer: C

Question 132

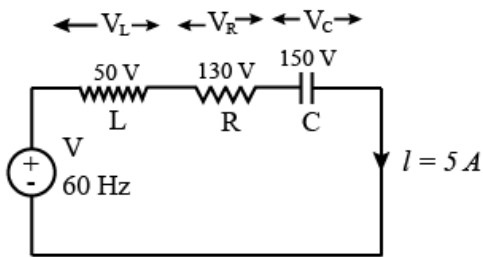
What is the peak-to-peak value of a sinusoidal voltage (in V) having average value of 100 V?

- A 141.14
- B 159.98
- C 282.88
- D 313.97

Answer: D

Question 133

What is the value of capacitance in ( $\mu F$ ) in the RLC circuit given below?

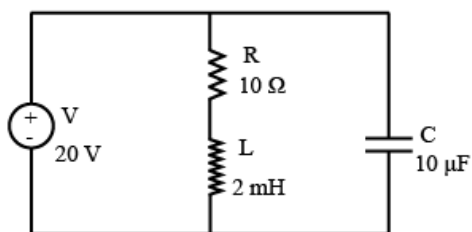


- A 30
- B 56.94
- C 75.68
- D 88.42

Answer: D

Question 134

A parallel RLC circuit is being supplied by a DC source as shown in the figure below. What is the value of current flowing through the resistor (in A)?



- A 0

- B 1
- C 2
- D 4

Answer: C

**Question 135**

Calculate the phase angle between the voltage and current phasor of a series RL circuit having resistance of 65 Ohms and inductive reactance of 37.53 Ohms when supplied by a frequency of 60 Hz.

- A 15
- B 30
- C 45
- D 60

Answer: B

**Question 136**

- Calculate the value of resonant frequency (in kHz) of a tank circuit having capacitance of 0.01 mF and inductance of 0.01 mH?

- A 0.1591
- B 1.591
- C 15.91
- D 159.1

Answer: C

**Question 137**

Calculate the induced emf (in V) in the inductor of a series RL circuit having inductance of 1.8 H and resistance of 90 Ohms after 20 milli-seconds, when supplied by a 20 V DC source.

- A 7.36
- B 10.03
- C 14.76
- D 20

Answer: A

**Question 138**

A delta connected 3-phase circuit has three equal resistances of 36 Ohms in each phase. What is the value of per phase resistance (in Ohms) of the equivalent star connected circuit?

- A 12
- B 36
- C 84

D 108

Answer: A

Question 139

Calculate the power factor of an AC circuit having an impedance of 16 Ohms, if a 4 A current flows through it and its average power consumption is 200 W.

A 0.68

B 0.78

C 0.88

D 0.98

Answer: B

Question 140

Power consumed by a balanced star connected 3-phase load is measured using two-wattmeter method. The phase voltage and phase current in the load is 220 V and 10 A respectively. What will be the difference in reading (in W) of the two wattmeters, if the power factor of the system is 0.8 lagging?

A 2286.3

B 2861.2

C 3048.4

D 3810.5

Answer: A

Question 141

Which of the following is the dimension of capacitance?

A  $\frac{ML^2}{A^2T^3}$

B  $\frac{A^2T^4}{ML^2}$

C  $\frac{ML^2}{A^2T^4}$

D  $\frac{M^2L^2}{A^2T^4}$

Answer: B

Question 142

A house has 5 fans of 70 W each that operate for 16 hours a day and one washing machine of 2000 W that operates for 1 hour per day in the month of June. What is the energy consumption (in kWh) of the house in the month of June?

A 228

B 235.6

C 350

D 486.6

Answer: A

Question 143

A PMMC type voltmeter, having a full scale reading of 250 V and an internal resistance of 400 kilo-ohms, is connect with a series resistance of 100 kilo-ohms. Calculate the sensitivity of the voltmeter (in Ohms/Volts).

- A 2400
- B 2000
- C 20000
- D 24000

Answer: B

Question 144

Determine the percentage voltage error of a potential transformer with the system voltage of 11,000 V and having a turn's ratio of 104, if the measured secondary voltage is 98 V.

- A 7.35
- B 5.75
- C 6.25
- D 8.84

Answer: A

Question 145

A circuit having powerfactor of 0.8 consumes 40 W. What will be the value of reactive power (in VAR) of the circuit?

- A 20
- B 40
- C 30
- D 10

Answer: C

Question 146

Determine the phase angle (in degrees) of a balanced 3-phase star connected system, if the first and the second wattmeter show readings of 200 W and 1200 W respectively.

- A 51
- B 65
- C 78
- D 84

Answer: A

Question 147

Which one of the following statement is NOT true about PMMC type instruments?



- A PMMC type instruments have uniformly divided scale.
- B These instruments are suitable for both AC and DC currents.
- C Stray magnetic errors are small in these types of instruments.
- D The cost of PMMC instruments is high.

Answer: B

Question 148

Which one of the following instrument can measure voltage, resistance, and current?

- A Ammeter
- B Voltmeter
- C Multimeter
- D Wattmeter

Answer: C

Question 149

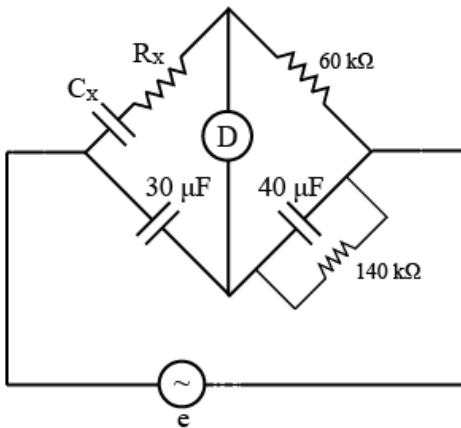
Which one of the following is the CORRECT expression for voltmeter sensitivity of PMMC type instrument?

- A  $\frac{R_m + R_s}{V}$
- B  $\frac{R_m R_s}{V}$
- C  $\frac{R_m + R_s}{V^2}$
- D  $\frac{R_m R_s}{V^2}$

Answer: A

Question 150

Determine the value of unknown resistance  $R_x$  (in  $k\Omega$ ) and unknown capacitance  $C_x$  (in  $\mu F$ ) respectively for the circuit given below, when no current flows through the detector (D)?



- A 70, 60
- B 80, 70

C 80, 60

D 60, 80

**Answer: B**

**Question 151**

**For a dc machine shuntresistance and armature resistance values are**

A high and high

B high and low

C low and low

D low and high

**Answer: B**

**Question 152**

**If the field of a dc shunt motor gets opened while the motor is running, then the**

A motor will become slow.

B motor will attain dangerously high speed

C armature current will drop

D armature will oscillate about original speed as the mean speed

**Answer: B**

**Question 153**

**Inter pole winding is connected in .....**

A series with armature

B series with main poles

C parallel with armature

D parallel with main poles

**Answer: A**

**Question 154**

**In large machines flat copper strips know as**

A windings

B bushes

C risers

D either of these

**Answer: C**

**Question 155**

**Lap winding is preferred for**

- A low current and low voltage
- B high current and high voltage
- C high current and low voltage
- D low current and high voltage

**Answer: C**

**Question 156**

**Scott connections are used for**

- A single phase to three phase transformation
- B three phase to single phase transformation
- C three phase to two phase transformation
- D any of the above

**Answer: C**

**Question 157**

**The primary and secondary windings of an Auto transformer are**

- A magnetically coupled
- B electrically coupled
- C both magnetically and electrically coupled
- D None of these

**Answer: C**

**Question 158**

**A 40KVA transformer has a core loss of 450 W and total loss of 800 W. Find the copper loss for Maximum efficiency.**

- A 350 W
- B 800 W
- C 450 W
- D None of these

**Answer: C**

**Question 159**

**The difference between the stator synchronous speed and rotor speed is called**

- A leading speed
- B lagging speed

C slip speed

D slow speed

**Answer: C**

**Question 160**

**In three induction motor maximum torque is inversely proportional to the**

A stator voltage

B speed of rotor

C rotor reactance

D decreasing slip speed

**Answer: C**

**Question 161**

**A hysteresis motor**

A is not a self-starting motor.

B is a constant speed motor

C needs dc excitation

D can not be run in reverse speed

**Answer: B**

**Question 162**

**In a hysteresis motor, the rotor must have**

A retentivity

B resistivity

C susceptibility

D None of these

**Answer: B**

**Question 163**

**In a split phase motor**

A the starting winding is connected through a centrifugal switch

B the running winding is connected through a centrifugal switch

C both starting and running windings are connected through a centrifugal switch

D centrifugal switch is used to control supply voltage

**Answer: A**

**Question 164**

Starting winding of a single phase motor of a refrigerator is disconnected from the circuit by means of a

- A magnetic relay
- B thermal relay
- C centrifugal switch
- D None of these

**Answer: A**

**Question 165**

The motor used on small lathesis usually

- A universal motor
- B D.C. shunt motor
- C single-phase capacitor run motor
- D 3-phase synchronous motor

**Answer: C**

**Question 166**

If the centrifugal switch does not open at 70 to 80 percent of synchronous speed of motor, it would result in

- A damage to the starting winding
- B damage to the centrifugal switch
- C overloading of running winding
- D None of these

**Answer: A**

**Question 167**

Under no load conditions the current in a transmission line is due to

- A corona effect
- B capacitance of the line
- C back low from earth
- D Spinning reserve

**Answer: B**

**Question 168**

If a fixed amount of power is to be transmitted over a certain length with fixed power loss, then .....

- A the weight of the conductor required will be proportional to the voltage
- B the weight of the conductor required will be inversely proportional to the voltage and that of power factor of the load

- C the weight of the conductor required will be inversely proportional to the square of the voltage and that of powerfactor of the load
- D the weight of the conductor will be proportional to the square of the voltage and directly proportional to the powerfactor of the load

**Answer: C**

**Question 169**

**Which of the following is a static exciter?**

- A DC separately excited generator
- B Amplidyne
- C metadyne
- D Rectifier

**Answer: D**

**Question 170**

**- In cables, the thickness of the layer of insulation on the conductor depends upon**

- A current carrying capacity
- B voltage
- C powerfactor
- D reactive power

**Answer: B**

**Question 171**

**In transmissionline generally, the wires used are**

- A ASCRwires
- B copper wires
- C iron wires
- D aluminium wires

**Answer: A**

**Question 172**

**Which one of the material is used to fix the screw on concrete wall and ceiling?**

- A Link clips
- B Bushings
- C Saddles
- D Rowlplug

**Answer: D**

Question 173

Which type of insulation covering the conductor used for low voltage?

- A Poly-vinyl Chloride(P.V.C)
- B Paper
- C vulcanised Indian Rubber(V.I.R)
- D Cotton and Silk Insulation

Answer: D

Question 174

Cheapest system of wiring is

- A casing and capping
- B cleat wiring
- C batten wiring
- D conduit wiring

Answer: B

Question 175

which type of wiring having very long life

- A Conduit wiring
- B casing capping wiring
- C batten wiring
- D cleat wiring

Answer: A

Question 176

Bucholz relay is operated by

- A eddy currents
- B gas pressure
- C electromagnetic induction
- D electrostatic induction

Answer: B

Question 177

The main consideration in designing feeders is

- A current carrying capacity
- B voltage drop

- C resistance
- D transmission voltage

Answer: A

**Question 178**

**Speed of the ceiling fan is about**

- A up to 10 rpm
- B up to 200 rpm
- C up to 450 rpm
- D up to 10000rpm

Answer: C

**Question 179**

**The air preheater in thermal powerplant is called as**

- A safety device
- B efficiency increasing equipment
- C Starting device
- D Very essential device

Answer: B

**Question 180**

**In synchronous motor damper winding is placed at**

- A stator
- B rotor
- C both stator and rotor
- D yoke

Answer: B

**Question 181**

**LED lamp have a general life expectancy of**

- A 1000 hrs.
- B 5000 hrs.
- C 15000hrs.
- D 50000 Hrs.

Answer: D



**Question 182**

**Cutting plier use for electrical work must have**

- A High strength
- B Insulation
- C Not corrode
- D sharp

**Answer: B**

**Question 183**

**The unit of luminous flux is**

- A Steradian
- B Candela
- C Lumen
- D Lux

**Answer: C**

**Question 184**

**A zero watt lamp consumes**

- A No power
- B About 5 to 7 W power
- C About 15 to 20 W power
- D About 25 to 30 W power

**Answer: C**

**Question 185**

**A DC generator used for AC welding should have ...../**

- A Rising characteristics
- B Dropping characteristics
- C Straight characteristics
- D None of these

**Answer: B**

**Question 186**

**The welding electric circuit is .....**

- A Always earthed
- B Never earthed

C Through cables only

D None of these

Answer: A

Question 187

Direct resistance heating is used in

A Electrode boiler

B Salt-bath furnace

C Resistance welding

D All options are correct

Answer: D

Question 188

The main drawback of resistance welding is

A High initial as well as maintenance cost.

B Difficult shapes and sections cannot be welded.

C Only similar metals can be welded.

D None of these

Answer: A

Question 189

The process of adding impurities to a semiconductor is known as .....

A polling

B intrusion

C pugging

D doping

Answer: D

Question 190

In a p-n junction the potential barrier is due to the charges on either side of the junction. These charges are

A majority carriers

B minority carriers

C Both majority as well as minority carriers

D fixed donor and acceptor ions

Answer: D

**Question 191**

The ripple factor is

- A  $\frac{\text{rms value}}{\text{DC value}}$
- B  $\frac{\text{peak value}}{\text{DC value}}$
- C  $\frac{\text{peak value}}{\text{rms value}}$
- D  $\frac{\text{rms value}}{\text{peak value}}$

**Answer: A**

**Question 192**

The output resistance (in k $\Omega$ ) of a common base transistor circuit is of the order of

- A 1
- B 50
- C 100
- D None of these

**Answer: D**

**Question 193**

For proper operation of a transistor, its collector should have

- A proper forward bias
- B proper reverse bias
- C very small size
- D None of these

**Answer: B**

**Question 194**

What are the characteristics of common collector configuration amplifier with respect to the input and output impedance?

- A Low input and high output impedance
- B High input and low output impedance
- C Low input and low output impedance
- D High input and high output impedance

**Answer: B**

**Question 195**

The speed of a synchronous motor can be changed by

- A changing the supply voltage

- B changing frequency
- C changing the load
- D changing supply terminals

**Answer: B**

**Question 196**

In a synchronous motor running with fixed excitation, when the load is increased two times, its torque angle becomes approximately

- A half
- B twice
- C four times
- D no change

**Answer: B**

**Question 197**

A three-phase synchronous motor will have

- A one slip-ring
- B two slip-rings
- C no slip-rings
- D three slip-rings

**Answer: B**

**Question 198**

The maximum speed variation in a synchronous motor is .

- A zero
- B 2. percent
- C 4 percent
- D 6 percent

**Answer: A**

**Question 199**

In a synchronous motor, the damping winding is generally used to

- A provide starting torque only
- B prevent hunting and provide the starting torque
- C reduce the eddy currents
- D reduce noise level

**Answer: B**

**Question 200**

**In a synchronous motor which loss varies with load ?**

- A** Windage loss
- B** Bearing friction loss
- C** Core loss
- D** Copper loss

**Answer: D**

