



SSC JE Electrical Engineering 2011

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General Intelligence and Reasoning

Instructions

Select the related word /letters/ number from the given alternatives.

Question 1

25 :37: : 49?

- A 42
- B 56
- C 64
- D 65

Answer: D

Question 2

9:39::45:?

- A 175
- B 185
- C 195
- D 205

Answer: C

Question 3

ONM: JIH:: TSR: ?

- A TSU
- B LMN
- C XYZ
- D ONM

Answer: C

Question 4

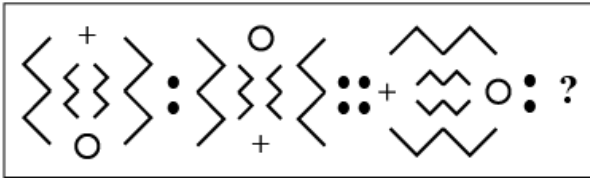
ZYXW : DCBA :: SRQP ?

- A ZXYP
- B KJIH
- C JHIL
- D ABCD

Answer: B

Question 5

Question figures:



A



B



C



D



Answer: A

Question 6

Tired : work :: Happy : ?

A Rest

B Success

C Eating

D Exercise

Answer: B

Question 7

Music : sitar :: ?

A Author: Book

B Literature: Novel

C Guitar: Sound

D Painter: Picture

Answer: B

Question 8

DEA: 10::ACE:?

- A 8
- B 10
- C 9
- D 11

Answer: C

Instructions

Find the odd word/number/letter/word or number pair from the given alternatives.

Question 9

- A 36
- B 64
- C 81
- D 46

Answer: D

Question 10

- A Apple
- B Mango
- C Potato
- D Orange

Answer: D

Question 11

- A Father-Daughter
- B Husband – Wife
- C Son–Mother
- D Brother – Sister

Answer: B

Question 12

- A BCD
- B FGH
- C NOP

D IKL

Answer: D

Question 13

A DKHM

B JNPR

C KORT

D MQTV

Answer: B

Question 14

A 4-9

B 36-49

C 16-25

D 64-80

Answer: D

Question 15

A 5698

B 7894

C 9865

D 8793

Answer: D

Instructions

For the following questions answer them individually

Question 16

Which one of the given responses would be the English dictionary order of the following words ?

1. Protein
2. Problem
3. Proverb
4. Property
5. Project

A 2, 1, 4, 3, 5

B 1, 2, 3, 4, 5

C 3; 4, 5, 2, 1

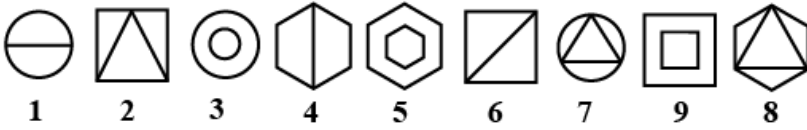
D 2, 5, 4, 1, 3

Answer: D

Question 17

A series of figures is given which can be grouped into classes. Select the group into which the figures can be classified from the given responses.

Question figures:



- A 1,2,3; 4,5,6; 7,8,9
- B 1,4,6; 2,7,9; 3,5,8
- C 1,3,7; 2,6,9; 4,5,8
- D 1,2,4; 3,6,5; 7,8,9

Answer: B

Question 18

Which one of the given responses would be a meaningful order of the following. words ?

1. Nation
2. Village
3. Taluk
4. District
- 5: State

- A 2,3,4,1,5
- B 1,3,5,4,2
- C 2,3,4,5,1
- D 1,2,3,4,5

Answer: C

Question 19

Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?
beabbebbca_bcabbab

- A acaa
- B cabe
- C acba
- D cacc

Answer: B

Instructions

A series is given with one/ two term(s) missing . Choose the correct alternative from the given ones that will complete the series.

Question 20

4, 14, 34, ?, 104, 154

- A 64

B 54

C 74

D 84

Answer: A

Question 21

75, 77, 72, 80, 69, 83, ?, ?

A 65,87

B 66,80

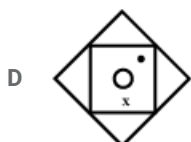
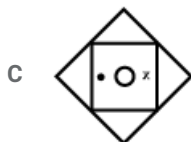
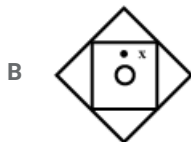
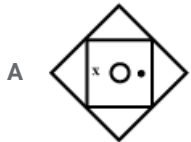
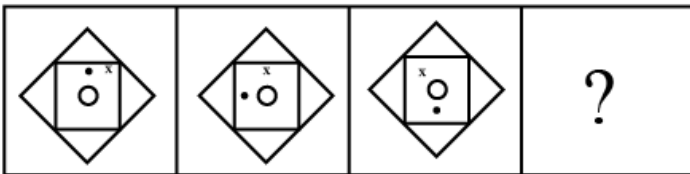
C 66,86

D 72,86

Answer: C

Question 22

Question figures:



Answer: A

Question 23

A, E, I, M, Q, U, ?

A V

B W

C Z

D Y

Answer: D

Question 24

CDF, DEC, EFH,?

A FGI

B FGH

C FHG

D EFI

Answer: A

Instructions

For the following questions answer them individually

Question 25

Which number is wrong in the given series ?

7, 9, 15, 27, 51, 99

A 7

B 9

C 15

D 27

Answer: A

Question 26

The average age of 10 children in a class is 12 years. If two children aged 14 and 16 years join the class, it will raise the average age by how much?

A 2 months

B 4 months

C 6 months

D 8 months

Answer: C

Question 27

If in a certain code, TOWER is written as OTEWR, then in that code, which word will be written as RTAIL ?

A TRIAL

B TRAIL

C TRLAI

D TAILR

Answer: A

Question 28

If HARD is coded as 1357 and SOFT is coded as 2468, then 21448 stands for

A HSOOT

B SHOQS

C SHOOT

D RGOQT

Answer: C

Question 29

Choose one word out of the given alternatives, which can be formed from the letters of the word 'DISOBEDIENCE'.

A DISTANCE

B OBEDIENT

C BESIDE

D DEFENCE

Answer: C

Question 30

Sachin walked 10 kms to north, turned left and walked 5 kms. Again he turned south and walked 4 kms. Finally, again he turned left and walked 5 kms. In which direction is Sachin from the starting point?

A East

B West

C North

D South

Answer: C

Question 31

A boy starts from home, which faces south. He walks a distance of 10 m, turns right and walks 10 m. Then he turns right and walks 10 m, then turns left and walks 10 m and walks back 5 m. What is the distance between the home and the boy?

A 35m

B 45m

C 15m

D 20 m

Answer: C

Question 32

Five students M,N,O, P and @ are standing in 2 row. O, who is the third to the left of P, is to the immediate right of M and second to the left of @ Q, who is not at any of the ends, is the third to the right of M. P is at one of the ends. Then who is standing in the middle ?

- A M
- B N
- C o
- D Q

Answer: B

Question 33

Among 5 sons of Raghav, Anand is the elder brother of Bhima, and Chandra is the elder brother of Anand. Bhima has younger brothers Dhanu and Ishwar. Who is the eldest son of Raghav?

- A Bhima
- B Anand
- C Chandra
- D Dhanu

Answer: C

Question 34

Amul is Atul's brother. Darly is Atul's mother. Lali is Darly's mother. Prakash is Lali's father. How is Amul related to Prakash ?

- A Son-in-law
- B Grandson
- C Great-grandson
- D Son

Answer: C

Question 35

A father's age is 3 times of his son's age at present. 10 years back, the father's age was 5 times of his son's age. What is the age of the son at present ?

- A 20 years
- B 30 years
- C 25 years
- D 15 years

Answer: A

Question 36

I am twelfth in the queue from either end. How many persons are there in the queue ?

A 13

B 23

C 14

D 24

Answer: B

Question 37

Choose one word out of the given alternatives, which cannot be formed from the letters of the word 'COMMENTATOR'.

A MENTOR

B COMMON

C ROTATE

D MEMBER

Answer: D

Question 38

Statements:

1. Some teachers are students.
2. All Students are girls.

Conclusions:

- I. All teachers are girls.
- II. Some girls are teachers.
- III. Some girls are students.
- IV. All students are teachers.

A Only I follows

B Only I and III follow

C Only II and III follow

D All follow

Answer: C

Question 39

Statements :

1. All young ladies are modern.
2. No modern men are religious minded.

Conclusions:

- I. No young ladies are religious minded.
- II. No young men are religious minded.

A Only I follows

B Only II follows

C Both I and II follow

D Neither I nor II follows

Answer: D

Question 40

There is an address which has been reproduced against (a), (b), (c) and (d). Three of these have some mistake or the other. The one without any mistake is your answer.

The Manager R&C Finance Limited
The Metropolitan, 10 Floor, B Block, Bandra (W)
Mumbai-400051

The Manager
R&C Finance Limited
A The Metropolitan, 10 Floor B Block, Bandra
(W)
Mumbai – 500051

The Manager
R&C Finance Limited
B The Metropolitan, 10th Floor, B Block, Bandra
(W)
Mumbai – 400051

The Manager,
R&C Finance Limited
C The Metropolitan, 11th Floor, D Block, Bandra
(W)
Mumbai – 400051

The Manager
R&C Finance Limited
D The Metropolitan, 10th Floor, B Block, Bandra
(W)
Mumbai – 400050

Answer: B

Instructions

Select the missing number from the given responses.

Question 41

8	3	9
6	4	2
4	8	?
192	96	324

A 48

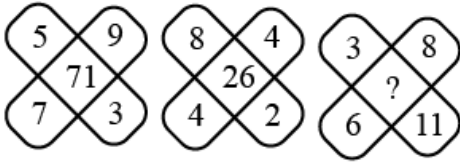
B 28

C 18

D 38

Answer: C

Question 42



- A 66
- B 68
- C 70
- D 62

Answer: D

Instructions

For the following questions answer them individually

Question 43

If ' \div ' stands for ' \times ', ' $-$ ' for ' $+$ ', ' $+$ ' for ' \div ', then which of the following equations is correct ?

- A $21 - 3 + 9 \div 12 = 51$
- B $21 + 3 \div 9 - 12 = 75$
- C $21 \div 9 + 3 - 12 = 51$
- D $21 - 3 \div 9 + 12 = 75$

Answer: B

Question 44

Some equations are solved on the basis of a certain system. On the same basis, find out the correct answer for the unsolved equation.

If $4 + 3 = 25$ and $5 + 2 = 29$, then $6 + 4 = ?$

- A 52
- B 100
- C 50
- D 48

Answer: A

Question 45

Postal PIN codes of 25 letters are given below. The first digit from the left indicates the zone and the last three digits the delivery Post Office. How many maximum letters are meant for the same delivery Post Office under Zone 2 ?

101012	221718	303051	221104	421015
221054	310032	101113	221108	230221
308015	308012	221054	101012	221054
111118	221054	210502	221054	101114
210512	182114	128107	183115	610014

- A 3

B 4

C 5

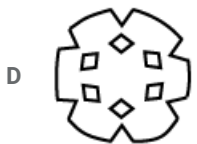
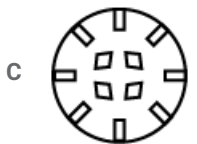
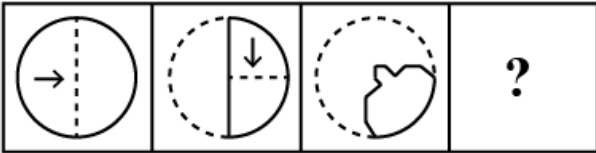
D 6

Answer: D

Question 46

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

Question figures:

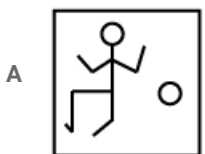
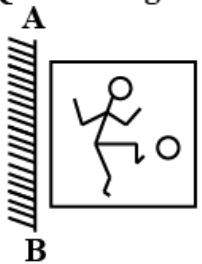


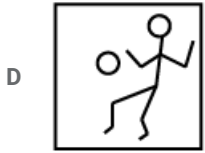
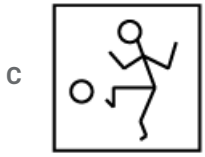
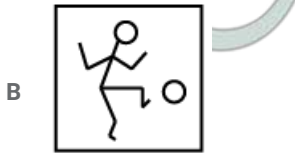
Answer: B

Question 47

If a mirror is placed on the line AB, then which of the answer figures is the correct image of the given question figure ?

Question figures:





Answer: C

Question 48

Which answer figure will complete the question figure?

Question figures:



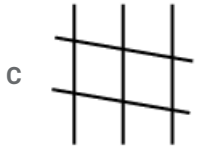
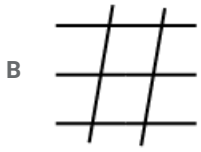
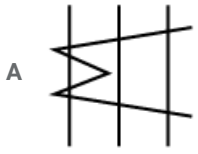
Answer: B

Question 49

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

Question figures:

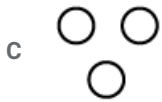
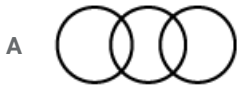




Answer: D

Question 50

Which of the given diagrams correctly represents the relationship among Mammals, Reptiles and Birds ?



Answer: C

General Awareness

Instructions

For the following questions answer them individually

Question 51

Who was the first Mughal ruler to introduce prohibition ?

- A Babar

- B Akbar
- C Humayun
- D Jahangir

Answer: D

Question 52

The Congress adopted the 'Purna Swaraj' resolution at Lahore on

- A 31st April, 1929
- B 31st December, 1929
- C 12th March, 1930
- D 8th August, 1942

Answer: B

Question 53

Which one of the following is not a basic industry?

- A Steel
- B Fertilizer
- C Paper
- D Cement

Answer: D

Question 54

'Agmark' seal is issued for commodities like

- A atta, ghee and honey
- B biscuit, egg and notebooks
- C milk, cotton and sweets
- D cream, vegetables and snacks

Answer: A

Question 55

SEZ stands for

- A Southern Economic Zone
- B South European Zone
- C Special Economic Zone
- D Special Eastern Zone

Answer: C

Question 56

The Agricultural Prices Commission was set up in the year

- A 1945
- B 1955
- C 1965
- D 1975

Answer: C

Question 57

Prof. Amartya Sen was awarded Nobel Prize in Economics in 1988 for his work on

- A Food and Famines
- B Welfare Economics
- C Poverty
- D Empowerment of women

Answer: B

Question 58

Who is the ultimate authority to decide whether a Bill is a Financial Bill or not?

- A Finance Minister
- B Speaker (Lok Sabha)
- C Prime Minister
- D President of India

Answer: D

Question 59

The writ that looks into the authority of a person in performing an official act is

- A Habeas Corpus
- B Mandamus
- C Prohibition
- D Quo warranto

Answer: A

Question 60

Shimla Pact was signed by

- A India and Pakistan
- B India and Sri Lanka

C India and Nepal

D India and China

Answer: A

Question 61

The Vice-President of India is elected by

A State Legislatures (Assemblies)

B two Houses of Parliament

C State Government

D People

Answer: B

Question 62

In addition to Rashtrapati Bhavan at Delhi, whereelse in India are official residences of the President located ?

A Hyderabad, Bengaluru

B Hyderabad, Shimla

C Hyderabad, Bhopal

D Hyderabad, Lucknow

Answer: B

Question 63

Which language was mostly used for the propagation of Buddhism in ancient period ?

A Sanskrit

B Pali

C Prakrit

D Sauraseni

Answer: B

Question 64

In which of the following reptiles is the heart a 4- chambered structure ?

A Lizard

B Turtle

C crocodile

D Snake

Answer: C

Question 65

Dogs are used for detective work by the police because they

- A Can hear ultrasonic waves of frequency upto 50,000 Hz
- B can hear infrasonic waves
- C can hear ultrasonic waves of frequency upto 1,20,000 Hz
- D Can hear sound waves of frequency in the range 20 Hz to 20,000 Hz

Answer: A

Question 66

The working principle of 'Jet engine' is the conservation of

- A linear momentum
- B angular momentum
- C energy
- D mass-energy

Answer: A

Question 67

Rabindranath Tagore renounced his knighthood as a protest against

- A Jallianwala Bagh massacre
- B Partition of Bengal
- C Execution of Chapekar brothers
- D Simon Commission

Answer: A

Question 68

Who popularised the slogan 'Jai Jawan, Jai Kisan' and 'Jai Hind' in all platforms?

- A Jawaharlal Nehru
- B Indira Gandhi
- C Lal Bahadur Shastri
- D Morarji Desai

Answer: C

Question 69

Rings of Saturn are made up of

- A ice
- B dust

C gas

D rock

Answer: A

Question 70

What is the name of Bhramaputra river in Tibet?

A Dihang

B Dibang

C Lohit

D Tsangpo

Answer: D

Question 71

Which one of the following is referred to as the 'Gold mine of timber' ?

A AndamanIslands

B Lakshadweep Islands

C Meghalaya

D Tripura

Answer: A

Question 72

The world's highest road from Manali to Leh has been constructed at an average height of

A 4000m

B 4500m

C 6230m

D 5300m

Answer: A

Question 73

The raw material for makingartificial silk is

A Wool

B Cellulose

C Silk

D Lines

Answer: B

Question 74

The plant which flowers outside and fruit development occurs inside the soil is

- A Groundnut
- B Cluster bean
- C Soyabean
- D Chick pea

Answer: A

Question 75

The largest flower in the world is

- A Orchid
- B Rafflesia
- C Sunflower
- D Musa

Answer: B

Question 76

The number of teeth which grow twice are

- A 08
- B 12
- C 14
- D 20

Answer: D

Question 77

Which of the following diseases is not a water-borne disease ?

- A Cholera
- B Typhoid
- C Asthma
- D Amoebic dysentery

Answer: C

Question 78

Name the bird which can fly backward.

- A Albatross
- B Crane

C Hummingbird

D Penguin

Answer: C

Question 79

"ECOMARC which is granted to a product having no harmful effect on the environment has a mark of

A Sun behind mountains

B Lotus flower in full bloom

C River flowing in mountains

D A tilted Pot on ground

Answer: D

Question 80

Which of the following is used to disinfect water in a non-chemical way ?

A Chlorine dioxide

B Ultraviolet light

C Ozone

D Chloramine

Answer: B

Question 81

According to a decision notified by the finance minister, coins of all denominations below 50 paise coin will cease to be legal currency from the date

A March 31, 2011

B June 30, 2011

C September 30, 2011

D December 31, 2011

Answer: B

Question 82

A bird sitting on a live wire does not get electrocuted because

A no current flows through it

B bird is light

C bird has no resistance

D bird has high resistance

Answer: A

Question 83

Apparent brightness of diamonds due to

- A reflection of light
- B refraction of light
- C total internal reflection
- D scattering of light

Answer: C

Question 84

Which of these is a component of a presentation graphics software ?

- A Page
- B Worksheet
- C Slide
- D Table

Answer: C

Question 85

The main aim of using information technology in business is

- A use the latest technology
- B improve business processes
- C transfer the duty of decision making to the computing system
- D increase the speed of the transactions

Answer: B

Question 86

The aviation fuel used in jet engines is

- A Coal gas
- B Refined kerosene
- C Petrol
- D Diesel

Answer: B

Question 87

The inert gas produced in the nuclear fusion process is

- A Helium
- B Argon

C Neon

D Krypton

Answer: A

Question 88

Which of the following is referred to as a breathing molecule in plants ?

A Chlorophyll

B Myoglobin

C Nitrogenase

D Haemoglobin

Answer: A

Question 89

Ethylene glycol is used in car radiators to

A facilitate evaporation of water

B lower the evaporation of water

C lower the freezing point of water

D lower the viscosity of water in the radiator

Answer: C

Question 90

Ganga action plan was initiated in

A 1982

B 1986

C 1989

D 1984

Answer: B

Question 91

In 1987 use of ozone degrading chemicals was banned in the convention held at

A Rio de Janeiro

B Montreal

C Chicago

D Delhi

Answer: B

Question 92

Which one of the following is not included in the list of the new seven wonders of the world announced in Lisbon, the capital of Portugal, on July 7, 2007 ?

- A Taj Mahal of India
- B Petra (Jordan)
- C The Hanging Garden of Babylon
- D Machu Picchu (Peru)

Answer: C

Question 93

India's intercontinental Ballistic missile AgniV, proposed to be tested in the year 2011, will have a range of

- A over 4500kms
- B Over 5000 kms
- C over 5500 kms
- D over 6000 kms

Answer: C

Question 94

The first Indian to win the Hoover Medal is

- A Dr. Manmohan Singh
- B Dr. Montek Singh Ahluwalia
- C Dr. Amartya Sen
- D Dr. APJ. Abdul Kalam

Answer: D

Question 95

A.P.J. Abdul Kalam has co-authored a book with a Jain Monk. The title of the book is

- A Branding India : An Incredible Story
- B The Family and the Nation
- C Getting a Grip on MyBody, My Mind, My Self
- D A Better India, A Better World

Answer: B

Question 96

Which one of the following India's World Heritage Sites included in UNESCO's list has not been matched correctly with its location ?

- A Humayun's Tomb - Delhi

- B Valley of Flowers - Uttarakhand
- C Airavatesvara Temple - Karnataka
- D Manas Wildlife Sanctuary - Assam

Answer: C

Question 97

Who of the following is not associated with Carnatic music ?

- A Tygaraja
- B Muthuswami Dikshitar
- C Bhatkhande
- D Shyam Shashtri

Answer: C

Question 98

At the 57th National Film Awards for 2009 in Delhi on September 15, 2010, separate awards were announced for Best Feature Film on 'National Integration' and Best Film on 'Other Social Issues'. Which film was adjudged as the Best Film on Other Social Issues?

- A Paa
- B Delhi-6
- C Well Done Abba
- D Lahore

Answer: C

Question 99

Who of the following got gold in Women's Freestyle Wrestling (59 kg) in the XIX Commonwealth Games 2010 held at Delhi?

- A Anita
- B Alka Tumar
- C Geeta Devi
- D Deepika Kumari

Answer: B

Question 100

As per the decision of the Olympic Council of Asia (OCA) and the Incheon Asian Games Organising Committee (IAGOC), two games to be retained / included in the next edition of the Asian Games in 2014 are

- A Cricket and Kabaddi
- B Chess and Cricket
- C Chess and Kabaddi

D Cue Sports and Cricket

Answer: A

General Engineering (Electrical)

Instructions

For the following questions answer them individually

Question 101

If in an R-L-C series circuit the current lags the applied voltage by 60° then

- A $X_L - X_C = \frac{R}{\sqrt{3}}$
- B $X_L - X_C = \sqrt{3}R$
- C $X_L = X_C = R$
- D $X_L - X_C = R$

Answer: B

Question 102

A lossy capacitor with loss angle of 0.01 radian, draws a current of 0.5 A when supplied at 1000 V from a sinusoidal voltage source. The active power consumed by the capacitor is

- A 5 W
- B 10 W
- C 2 w
- D 1 w

Answer: A

Question 103

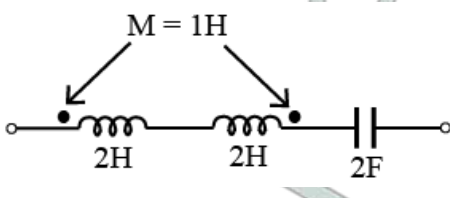
An AC voltage source with an internal impedance Z_1 is connected to a load of impedance Z_2 . For maximum power transfer to the load, the condition is

- A $|Z_2| = |Z_1|$
- B $Z_2 = Z_1$
- C $Z_2^* = -Z_1$
- D $Z_2 = Z_1^*$

Answer: D

Question 104

The resonant frequency of the AC series circuit shown in figure given below, in Hz is



A $\frac{1}{4\pi\sqrt{3}}$

B $\frac{1}{4\pi\sqrt{2}}$

C $\frac{1}{4\pi}$

D $\frac{1}{4\pi\sqrt{10}}$

Answer: C

Question 105

A current wave starts at zero, rises instantaneously, then remains at a value of 20 A for 10 sec, then decreases instantaneously, remaining at a value of -10 A for 20 sec, and then repeats this cycle. The rms value of the wave is

A 22.36 A

B 17.32 A

C 8.165 A

D 14.14 A

Answer: D

Question 106

Two incandescent bulbs of rating 230 V, 100 W and 230 V, 500 W are connected in parallel across the mains. As a result what will happen?

A 100 W bulb will glow brighter

B 500 W bulb will glow brighter

C Both the bulbs will glow equally bright

D Both the bulbs will glow dim

Answer: B

Question 107

In two wattmeter method of measurement of threephase power of a balanced load, if both the wattmeters indicate the same reading, then the power factor of the load is

A 0.5 lagging

B less than 0.5 lagging

C unity

D greater than 0.5 lagging

Answer: C

Question 108

Measurement of _____ is affected by the presence of thermo-emf in the measuring circuit

A high resistance

- B low resistance
- C capacitance
- D inductance

Answer: A

Question 109

The response time of an indicating instrument is determined by its

- A deflecting system
- B damping system
- C controlling system
- D support type to the moving system

Answer: B

Question 110

The ratio of the reading of two wattmeters connected to measure active power in a balanced 3-phase load is 2 : 1. The power factor of the load is

- A 0.866 lag
- B 0.866 lead
- C 0.866 lag or lead
- D None of the above

Answer: A

Question 111

The power input to a 3-phase, 50 Hz, 400 V, 4-pole induction motor is 60 kW and its stator losses are 1 kW. If this motor is running at 4% slip, the rotor copper loss is

- A 1.18 kW
- B 2.36 kW
- C 0.18 kW
- D 0.36 kW

Answer: B

Question 112

In a transformer, the core loss is found to be 46 W at 50 Hz and is 80 W at 70 Hz, both losses being measured at the same peak flux density. The hysteresis loss and eddy current loss at 60 Hz is

- A 11 W, 20 W
- B 30 W, 45 W
- C 16 W, 30 W

D 22 W, 40 W

Answer: D

Question 113

The voltage wave given by $v = 4 \cos \omega t$ produces a current wave $i = 1.5 \cos \omega t - 2.598 \sin \omega t$ in a circuit. The current wave

A leads voltage wave by 60°

B lags voltage wave by 60°

C leads voltage wave by 30°

D lags voltage wave by 30°

Answer: A

Question 114

The damping in D Arsonval galvanometer is obtained by

A a shunt connected across moving coil

B eddy current induced in metal discs

C fluid friction

D employing springs

Answer: B

Question 115

If θ represents deflection of pointer, the controlling torque in a spring-controlled indicating instrument is proportional to

A θ

B θ^2

C $\frac{1}{\theta}$

D $\sin \theta$

Answer: A

Question 116

The range of a DC milliammeter can be extended by using a

A low resistance in series

B low resistance shunt

C high resistance in series

D high resistance shunt

Answer: B

Question 117

For use in AC circuits, potential coil circuit of electrodynamic wattmeter should be purely

- A resistive
- B inductive
- C capacitive
- D reactive

Answer: A

Question 118

A DC shunt generator builds upto 230 V. Other conditions remaining same, if only the residual magnetism of the original machine is reversed, the voltage to which the generator will build up is

- A 230 V with brush polarity reversed
- B 230 V with brush polarity same
- C somewhat less than 230 V with brush polarity reversed
- D somewhat less than 230 V with brush polarity same

Answer: A

Question 119

A 100 kVA single phase transformer exhibits maximum efficiency at 80% of full load and the total loss in the transform under this condition is 1000 W. The ohmic losses at full load will be

- A 781.25 watt
- B 1250 watt
- C 1562.5 watt
- D 12500 watt

Answer: A

Question 120

If a 3-phase induction motor hums during starting up, the probable cause could be

- A unequal stator phase resistance
- B open circuited rotor
- C interturn short circuit on rotor
- D any of the above

Answer: C

Question 121

In a 3-phase synchronous generator, the stator winding is connected in star, because a delta connection would

- A have circulating currents due to triple harmonics
- B require more insulation and conductor material

C require larger conductor and more core material

D result in a short circuit

Answer: A

Question 122

A 40 kVA transformer has a core loss of 400 W and full load copper loss of 800 W. The fraction of rated load at maximum efficiency is

A 50%

B 62.3%

C 70.7%

D 100%

Answer: C

Question 123

The torque developed in a DC series motor in unsaturated magnetic circuit condition is

A almost practically constant at all load currents

B require more insulation and conductor material

C require large conductor and more core material

D require in a short circuit

Answer: C

Question 124

A 220 V shunt motor develops a torque of 60 Nm at an armature current of 10 A. The torque developed when the armature current is 20 A, is

A 30 Nm

B 240 Nm

C 84 Nm

D 120 Nm

Answer: D

Question 125

An alternator has rated field current of 3 A. It is developing 180 V at a field current of 1.5 A at rated speed. If its field current is made 3 A at rated speed, then the generated voltage would be

A 360 V

B 180 V

C less than 360 V

D 270 V

Answer: C

Question 126

High voltage transmission efficiency is in the range of

- A 30-45%
- B 55-70%
- C 5-10%
- D 85-95%

Answer: D

Question 127

In which of the following industries, are all the motors totally enclosed and moisture proof ?

- A Iron and steel industry
- B Sugar industry
- C Paper industry
- D Textile industry

Answer: C

Question 128

100 kg of tin is to be smelt during an hour in a smelting furnace. If the smelting temperature of tin = 235°C , specific heat = 0.054, latent heat of liquidification = 13.3k cal/kg, initial temperature of tin = 35°C , value of J = 4200J/k cal, then the capacity of the furnaces is

- A 2.81 kW
- B 1.26 kW
- C 2812 kW
- D 3032 kW

Answer: E

Question 129

In suspension type insulator the potential drop is

- A maximum across the lowest disc
- B maximum across the topmost disc
- C maximum across the disc at the midpoint of the string
- D uniformly distributed across the string

Answer: A

Question 130

Of the following water turbines, which is not a reaction turbine ?

- A Pelton wheel
- B Kaplan turbine
- C Propeller turbine
- D Francis turbine

Answer: A

Question 131

If the speed of a universal motor in AC operation is N_{AC} and in DC operation is N_{DC} , (and I = current, V = supply voltage, r = resistance, X = reactance, $\cos \phi$ = power factor) then the speed ratio

A $\frac{N_{AC}}{N_{DC}} = \frac{\cos \phi - \frac{IX}{V}}{1 - \frac{Ir}{V}}$

B $\frac{N_{AC}}{N_{DC}} = \frac{1 - \frac{Ir}{V}}{\cos \phi - \frac{IX}{V}}$

C $\frac{N_{AC}}{N_{DC}} = \frac{1 - \frac{Ir}{V}}{\cos \phi - V}$

D $\frac{N_{AC}}{N_{DC}} = \frac{\cos \phi - \frac{Ir}{V}}{1 - V}$

Answer: E

Question 132

Sheaths are used in underground cables to

- A provide proper insulation
- B provide mechanical strength
- C protect the cable from moisture
- D none of the above

Answer: C

Question 133

If the frequency of a transmission system is changed from 50 Hz to 100 Hz, the string efficiency

- A will increase
- B will decrease
- C remains unchanged
- D may increase or decrease depending on the line parameters

Answer: B

Question 134

The power station where coal is used as a fuel is called

- A terrestrial power station
- B thermal power station
- C solar power station
- D nuclear power station

Answer: B

Question 135

Making capacity of a circuit breaker is equal to

- A 2.55 times symmetrical breaking current
- B 1.5 times symmetrical breaking current
- C $\sqrt{2}$ times symmetrical breaking current
- D symmetrical breaking current

Answer: A

Question 136

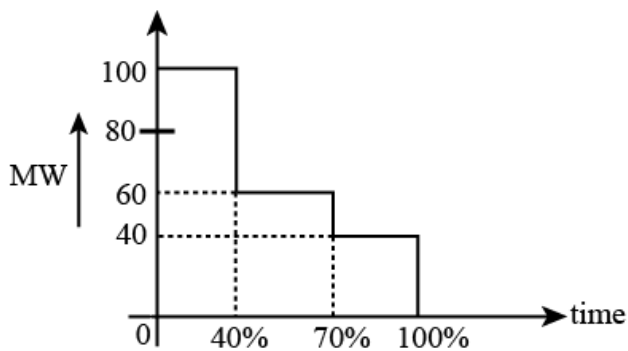
A power insulator has 4 units. The voltage across the bottom-most unit is 33.33% of the total voltage. Its string efficiency is

- A 25%
- B 33.33%
- C 66.67%
- D 75%

Answer: D

Question 137

Load factor for the load duration curve shown below is



- A 1.0
- B 0.7
- C 0.6
- D 0.5

Answer: B

Question 138

Resistance switching is normally employed in

- A all types of circuit breakers
- B bulk oil circuit breakers
- C minimum oil breakers
- D air blast circuit breakers

Answer: D

Question 139

Which one is the disadvantage of oil when used as an arc extinguishing medium in the oil circuit breaker

- A During arcing, oil produces carbon particles
- B During arcing, oil produces hydrogen gas
- C Oil provides insulation to the live exposed contacts from the earthed parts of the breaker
- D Oil provides good insulation between the fixed and moving contacts

Answer: A

Question 140

If the discharge voltage of a thyrite arrester is 373 kV rms and the rated voltage is 211kV rms, the discharge factor of the arrester is

- A 1.25
- B 0.80
- C 1.77
- D 2.5

Answer: D

Question 141

During arc extinction SF_6 gets

- A decomposed into SF_4 and SF_2
- B decomposed into S and F ions
- C reduced to SF_2
- D oxidised

Answer: A

Question 142

Sparking between the contacts of a circuit breaker can be reduced by inserting

- A a capacitor in parallel with the contacts

- B a capacitor in series with the contacts
- C a resistor in the line
- D a reactor in the line

Answer: A

Question 143

If the inductance and capacitance of a power system are respectively 1H and $0.01 \mu F$ and the instantaneous value of interrupted current is 10A, then the voltage across the breaker contacts will be

- A 50 kV
- B 57 kV
- C 60 kV
- D 100 kV

Answer: D

Question 144

Which of the following materials for heating element should be selected if a furnace is to be used for heating upto temperature around $1500^{\circ}C$?

- A Eureka
- B Kanthal
- C Platinum-molybdenum carbon compound
- D Nichrome

Answer: C

Question 145

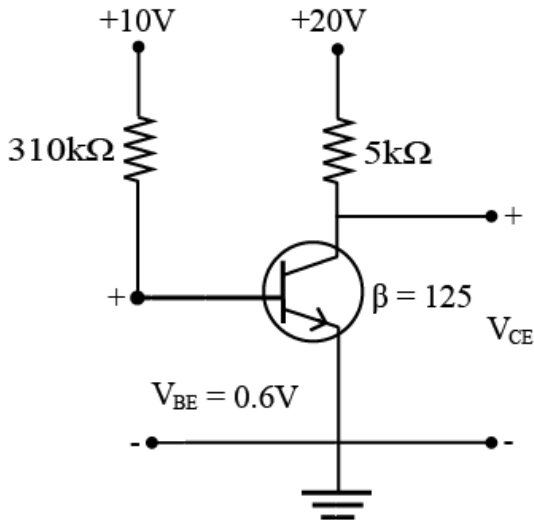
The type of DC generator used for arc welding should be a

- A series generator
- B shunt generator
- C cumulatively compounded generator
- D differentially compounded generator

Answer: D

Question 146

A transistor is operating in common emitter mode as shown in figure given below. The voltage V_{CE} is



- A 10.05 V
- B 1.5 V
- C 1.05 V
- D 0.5 V

Answer: C

Question 147

By increasing the transmission voltage to double of its original value the same power can be despatched keeping the line loss

- A equal to its original value
- B half the original value
- C double the original value
- D one-fourth of original value

Answer: D

Question 148

Which of the following is true ?

- A Load factor = capacity factor \times utilization factor
- B Utilisation factor = capacity factor \times load factor
- C Capacity factor = load factor + utilisation factor
- D Capacity factor = Load factor \times utilisation factor

Answer: D

Question 149

An electric load consumed 17.32 kW at a power factor of 0.707 (lagging). For changing the load power factor to 0.866 (lagging), the capacitor that is to be connected in parallel with the load, should draw

- A 7.32 kVAR
- B 10 kVAR
- C 27.32 kVAR
- D 10.32 kVAR

Answer: A

Question 150

The most appropriate way of mitigating the problem of interference between power line and communication line is to

- A transpose the power line
- B transpose the communication line
- C use double circuit power line
- D use bundled conductor power line

Answer: A