ELECTRICAL

1.

The S.I. unit of power is

(A)
Henry

(B)
Coulomb

(C)
Watt

(D)
watt-hour

Ans: “Watt”

2.

Conductance is reciprocal of

(A)
resistance

(B)
inductance

(C)
reluctance

(D)
Capacitance

Ans: “resistance”

3.

R1 = 1Ω, R2 = 3Ω, R3 = 5Ω and R4 = 7Ω connected in parallel. Total Current = 23(A) Then V, I1 , I2 =?

(A)
12.26v, 1.725, 2.875

(B)
12.23v, 2.875, 1.725

(C)
11.26v, 1.95, 1.74

(D)
11.23v, 1.74, 1.95

Ans: “12.26v, 1.725, 2.875”

4.

A Wheatstone bridge is balanced when the galvanometer shows _____ reading.

(A)
0A

(B)
1A

(C)
Infinity

(D)
-1A

Ans: “0A”

5.

Vibrating reeds are used in which of the following instruments

(A)
Power factor meter

(B)
Frequency factor meter

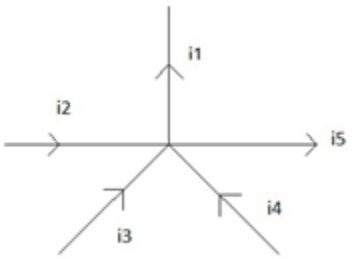
(C)
Wattmeter

(D)
Synchronoscope

Ans: “Frequency factor meter”

6.

Relation between currents according to KCL is



(A)
i1=i2=i3=i4=i5

(B)
i1+i4+i3=i5+i2

(C)
i1-i5=i2-i3-i4

(D)

i1+i5=i2+i3+i4

Ans: “i1+i5=i2+i3+i4”

7.

Which of the following can be measured using Maxwell’s Inductance Capacitance Bridge?

(A)
Capacitance

(B)
Frequency

(C)
Mutual Inductance

(D)
Inductance

Ans: “Inductance”

8.

Which is the most widely used material in the core of the transformer?

(A)
cold rolled grain oriented sheet steel

(B)
cold rolled grain steel

(C)
soft iron

(D)
steel

Ans: “cold rolled grain oriented sheet steel”

9.

What are the materials used for brushes in dc machines?

(A)
Iron

(B)
Carbon

(C)
Aluminum

(D)
Steel

Ans: “Carbon”

10.

Why OC test is performed on LV side?

(A)
Simple construction

(B)
Less voltage is required and parameters can be transformed to HV side

(C)
It’ll not give losses ig conducted on HV side

(D)
HV side does not have connections for voltage

Ans: “Less voltage is required and parameters can be transformed to HV side”

11.

The total core loss can be termed as _____

(A)
Eddy current loss

(B)
Hysteresis loss

(C)
Copper loss

(D)
Magnetic loss

Ans: “Magnetic loss”

12.

The external resistance can be inserted in rotor circuit of _____

(A)
wound rotor induction motor

(B)
slip ring induction motor

(C)
wound rotor as slip ring induction motor

(D)
neither of motors

Ans: “wound rotor induction motor”

13.

Which motors are preferred for refrigeration and air conditioning in smaller units?

(A)
Induction motors.

(B)
Universal motors.

(C)
Reluctance motors.

(D)
Stepper

Ans: “Induction motors.”

14.

A 3-phase induction motor runs at almost 1500 rpm at no load and 900 rpm at full load when supplied with power from a 50 Hz, 3-phase supply. What is the corresponding speed of the rotor field with respect to the rotor?

(A)
300 revolution per minute

(B)
400 revolution per minute

(C)
600 revolution per minute

(D)

500 revolution per minute

Ans: “600 revolution per minute”

15.

The power factor of an induction motor operating at no load will have a value of around

(A)
0.9 lag

(B)
0.2 lead

(C)
0.2 lag

(D)
0.9 lead

Ans: “0.2 lag”

16.

What is the function of breather in a transformer?

(A)
To provide oxygen inside the tank

(B)
To cool the coils during reduced load

(C)
To cool the transformer oil

(D)
To arrest flow of moisture when outside air enters the transformer

Ans: “To arrest flow of moisture when outside air enters the transformer”

17.

A 3-phase 4-wire system is commonly used for

(A)
Primary Distribution

(B)
Secondary Distribution

(C)
Primary Transmission

(D)
Secondary Transmission

Ans: “Secondary Distribution”

18.

Transmission line connects

(A)
Generating station to a switching station/step-down transformer station.

(B)
Step-down transformer station to service transformer banks.

(C)
Distribution transformer to consumer premises.

(D)
Service points to consumer premises.

Ans: “Generating station to a switching station/step-down transformer station.”

19.

Single line diagram does not represents:

(A)
Ratings of machines

(B)
Neutral wire of transmission lines

(C)
Delta connection of transformer winding

(D)
Star connection of transformer winding

Ans: “Neutral wire of transmission lines”

20.

High voltage transmission lines use

A
suspension insulators

B
pin insulators

C
Tackle Insulator

D
Strain insulator

Ans: “suspension insulators”

21.

Feeder is designed mainly from the point of view of-

(A)
Its current carrying capacity

(B)
Voltage drop in it

(C)
Operating voltage

(D)
Operating Frequency

Ans: “Its current carrying capacity”

22.

Improving power factor-

(A)
Reduces current for a given output

(B)
Increases losses in line

(C)
Increases the cost of station equipment

(D)
Reduces the Voltage

Ans: “Reduces current for a given output”

23.

Corona is-

(A)

Partial breakdown of air

(B)
Complete breakdown of air

(C)
Sparking between lines

(D)
Normal discharge

Ans: “Complete breakdown of air”

24.

What is the source of biomass energy?

(A)
Wind

(B)
Sunlight

(C)
Animal waste

(D)
Hydrogen

Ans: “Animal waste”

25.

Which of these resources does not produce CO2 during electricity generation?

(A)
Coal

(B)

Methane

(C)
Uranium

(D)
Biogas

Ans: “Uranium”

26.

Acid rain happens because

(A)
the sun leads to the heating of the upper layer of the atmosphere

(B)
the burning of fossil fuels releases oxides of carbon, nitrogen, and sulphur in the atmosphere

(C)
electrical charges are produced due to friction among clouds

(D)
earth’s atmosphere contains acids

Ans: “the burning of fossil fuels releases oxides of carbon, nitrogen, and sulphur in the atmosphere”

27.

The minimum wind speed require to rotate the windmills for generation of electricity is….

(A)
15 m/hr

(B)
1 km/h

(C)
15 km/h

(D)
20 km/h

Ans: “15 km/h”

28.

Temperature of Solar cooker can be increased to higher level with the help of……..

(A)
convex mirror

(B)
convex lens

(C)
concave mirror

(D)
concave lens

Ans: “concave mirror”

29.

The source of energy of the sun is

(A)
the conversion of hydrogen gas into helium

(B)
the conversion of carbon fuel into carbon dioxide

(C)
the burning of hydrogen gas present in the sun

(D)
the disintegration of uranium into barium and krypton

Ans: “the conversion of hydrogen gas into helium”

30.

What type of semiconductor is used in LED electronic circuits?

(A)
Intrinsic semiconductor

(B)
Compound semiconductor

(C)
Degenerated semiconductor

(D)
Compensated semiconductor

Ans: “Compound semiconductor”

31.

The breakdown mechanism in a lightly doped p-n junction under reverse biased condition is called

(A)
avalanche breakdown.

(B)
zener breakdown.

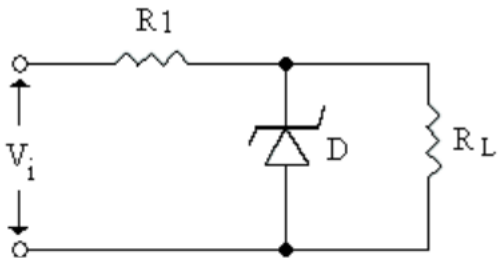
(C)
breakdown by tunnelling.

(D)
high voltage breakdown

Ans: “avalanche breakdown.”

32.

In the voltage regulator shown below, if the current through the load decreases,



(A)
The current through R1 will increase.

(B)
The current through R1 will decrease.

(C)
zener diode current will increase.

(D)
zener diode current will decrease.

Ans: “zener diode current will increase.”

33.

The element that has the biggest size in a transistor is ……..

(A)
collector

(B)
base

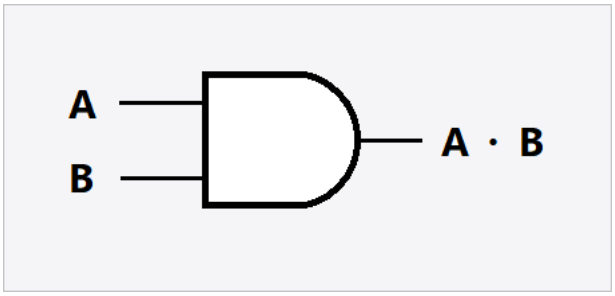
(C)
emitter

(D)
collector-base-junction

Ans: “collector”

34.

The symbol represent gate is



(A)
AND

(B)
OR

(C)
NOT

(D)
NAND

Ans: “AND”

35.

Voltage-divider bias provides …….

(A)
an unstable Q point

(B)
a stable Q point

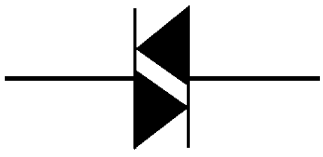
(C)
a Q point that easily varies with changes in the transistor’s current gain

(D)
a Q point that is stable and easily varies with changes in the transistor’s current gain

Ans: “a stable Q point”

36.

The symbol represent



(A)
Diac

(B)
Thyristor

(C)

Triac

(D)
Zener diode

Ans: “Diac”

37.

The TRIAC can be represented by

(A)
two SCRs in anti-parallel

(B)
two SCRs in parallel

(C)
two diodes in anti-parallel

(D)
two diodes in parallel

Ans: “two SCRs in anti-parallel”

38.

For the SCR to remain in the ON (conducting) state

(A)
gate signal is continuously required

(B)
no continuous gate signal is required

(C)
no forward anode-cathode voltage is required

(D)
negative gate signal is continuously required

Ans: "no continuous gate signal is required"

39. The given electrical network is equivalent to

(A)
AND gate

(B)
OR gate

(C)
NOR gate

(D)
NOT gate

Ans: "NOR gate"

40.

A relay is ……. switch

(A)
A mechanical

(B)
An electronic

(C)
An electromechanical

(D)
Electrical

Ans: “An electromechanical “

GENERAL INTELLIGENCE AND REASONING

41.

3, 4, 7, 11, 18, 29,?

(1)
31

(2)
39

(3)
43

(4)
47

Ans: “47”

42.

AGMSY, CIOUA, EKQWC, ? , IOUAG, KQWCI

(1)
GMSYE

(2)
FMSYE

(3)
GNSYD

(4)
FMYES

Ans: “GMSYE”

43.

M is the son of P. Q is the granddaughter of 0 who is the husband of P. How is M related to O?

(1)
Son

(2)
Daughter

(3)
Mother

(4)
Father

Ans: “Son”

44.

In a row of boys, Srinath is 7th from the left and Venkat is 12th from the right. If they interchange their positions, Srinath becomes 22nd from the left. How many boys are there in the row?

(1)
19

(2)
31

(3)
33

(4)
34

Ans: “33”

45.

From the given alternative words, select the word which cannot be formed using the letters of the given word: Given: IMPASSIONABLE

(1)
IMPASSABLE

(2)
IMPOSSIBLE

(3)
IMPASSIVE

(4)
IMPASSION

Ans: “IMPASSIVE”

46.
A man starts from a point, walks 8 km towards north, turns right and walks 12 km, turns left and walks 7 km, turn and walks 24 km towards south, turns right and walks 12 km. In which direction is he from the starting point?

(A)
North

(B)
South

(C)
West

(D)
East

Ans: “South”

47.

Fish : Scales : : Bear : ?

(A)
Feathers

(B)
Leaves

(C)
Fur

(D)
Skin

Ans: “Fur”

48.

Writer : Pen : : ?

(A)
Needle

(B)
Artist : : Tailor Brush

(C)
Painter

(D)
Teacher : Canvas : Class

Ans: “Painter”

49.

Petr walked 8 kms. west and turned right and walked 3 kms. The again he turned right and walked 12 kms. How far is he from the starting point?

(A)
7

(B)
8

(C)
4

(D)
8

Note: Inspite of our meticulous scrutiny,unfortunately the correct answer is not found in the given four alternatives.This defect will be mitigated satisfactorily.

50.

If '×' means 'addition' '-' means 'division', '÷' means 'subtraction' and '+' means 'multiplication', then which of the following equations is correct?

(1)
16 + 5 - 10 × 4 ÷ 3 = 9

(2)
16 - 5 × 10 ÷ 4 + 3 = 12

(3)
16 + 5 ÷ 10 × 4 - 3 = 9

(4)
16 × 5 ÷ 10 ÷ 4 - 3 = 19

Ans: “16 + 5 - 10 × 4 ÷ 3 = 9”

GENERAL AWARENESS

51.

K Kamarajar, whose birth anniversary was recently observed, was a Chief Minister of which state?

(A)
Kerala

(B)
Tamil Nadu

(C)
Karnataka

(D)
Andhra Pradesh

Ans: “Tamil Nadu”

52.

Which Union Ministry’s website has been ranked first in the National e-Governance Service Delivery Assessment?

(A)

Ministry of Culture

(B)
Ministry of Home Affairs

(C)
Ministry of Defence

(D)
Ministry of Finance

Ans: “Ministry of Home Affairs”

53.

‘Banga Bibhushan award’ was introduced by which Chief Minister of West Bengal?

(A)
Mamata Banerjee

(B)
Buddhadeb Bhattacharya

(C)
Jyoti Basu

(D)
Prafulla Chandra Sen

Ans: “Mamata Banerjee”

54.

‘PDUNWFS’ is a scheme implemented by which Union Ministry?

(A)

Ministry of Agriculture

(B)
Ministry of Education

(C)
Ministry of Youth Affairs and Sports

(D)
Ministry of Commerce and Industry

Ans: "Ministry of Youth Affairs and Sports"

55.

What is the name of the flag campaign to be hosted by India in the month of August 2022?

(A)
'Humara Tiranga' Campaign

(B)
'Har Ghar Tiranga' Campaign

(C)
Azadi Ka Amrit Tiranga Campaign

(D)
Bharat Tiranga Campaign

Ans: "'Har Ghar Tiranga' Campaign"

56.

Elephant Conservation Network (ECN) has been recently formed in which state/UT?

(A)

Assam

(B)
Madhya Pradesh

(C)
Kerala

(D)
Karnataka

Ans: “Assam”

57.

Which country announced to invest Rs 7,200 crores in Uttar Pradesh?

(A)
China

(B)
Japan

(C)
Australia

(D)
Germany

Ans: “Japan”

58.

Which institution prepares the National Health Account (NHA) estimates for India?

(A)
WHO

(B)
NITI Aayog

(C)
AIIMS

(D)
NHSRC

Ans: “NHSRC”

59.

The Union Territory of Andaman and Nicobar islands comes under the jurisdiction of a __

(A)
Circuit bench of the Bombay High Court at Port Blair

(B)
Circuit bench of the Madras High Court at Port Blair

(C)
Circuit bench of the Kolkata High Court at Port Blair

(D)
Circuit bench of the Supreme Court at Port Blair

Ans: “Circuit bench of the Kolkata High Court at Port Blair”

60.

Consider the following countries:

(1)

Myanmar

(2)

Thailand

(3)

Cambodia

(4)

Indonesia

India’s Andaman and Nicobar Islands share a maritime border with which among the above countries?

(A)
1 & 2

(B)
2 & 3

(C)
3 & 4

(D)
1, 2 & 4

Ans: “1, 2 & 4”

MECHANICAL

61.
Which among the following have the same forces acting on them?

(A)
Dynamic similarity
(B)
Geometric similarity
(C)
Conditional similarity

(D)
Kinematic similarity

Ans: "Dynamic similarity"

62.
Pipes of largest diameter which carry water from reservoir to the turbines is known as_____

(A)
Head stock
(B)
Tail race
(C)
Tail stock
(D)
Pen stock

Ans: "Pen stock"

63.
In a Simple Vertical boiler, two cross tubes are provided with the fire box. Which of the following statement about the orientation of these tubes is correct?

(A)
Both of them are vertical
(B)
Both of them are horizontal
(C)
Both of them are inclined
(D)
One is horizontal and the other one is vertical

Ans: "Both of them are inclined"

64.

What is the mixture of Gasohol?

(A)
90% ethanol + 10% gasoline
(B)
10% ethanol + 90% gasoline
(C)
40% ethanol + 60% gasoline
(D)
50% ethanol + 50% gasoline

Ans: “10% ethanol + 90% gasoline”

65.

Which type of job, does the scroll perform in three jaw chuck?

(A)
only clamps a component in place
(B)
locates the component
(C)
clamps a component in place and locates the component
(D)
none of all mentioned

Ans: “clamps a component in place and locates the component”

66.

Straddle milling can be performed more effectively by _____ milling machine.

(A)
horizontal
(B)
vertical
(C)
Series
(D)
Parallel

Ans: “horizontal”

67.
Which of the following can be used as job holding device in slotting machine?

(A)
Cross rail
(B)
Column
(C)
Ram
(D)
Vice

Ans: “Vice”

68.

Paving is also known as _____

(A)
Floor covering
(B)
Sub floor
(C)
Sub grade
(D)
Wearing course

Ans: “Floor covering”

69.
_____ attached to a Framework suspended from the main structure.

(A)
Cantering
(B)
Shuttering
(C)
Bracing
(D)

Ceiling

Ans: “Ceiling”

70.
In an experiment, the bulk modulus of elasticity of a material is twice its modulus of rigidity. The Poissons ratio of the material is _____

(A)
1/7
(B)
2/7
(C)
3/7
(D)
4/7

Ans: “2/7”

71.

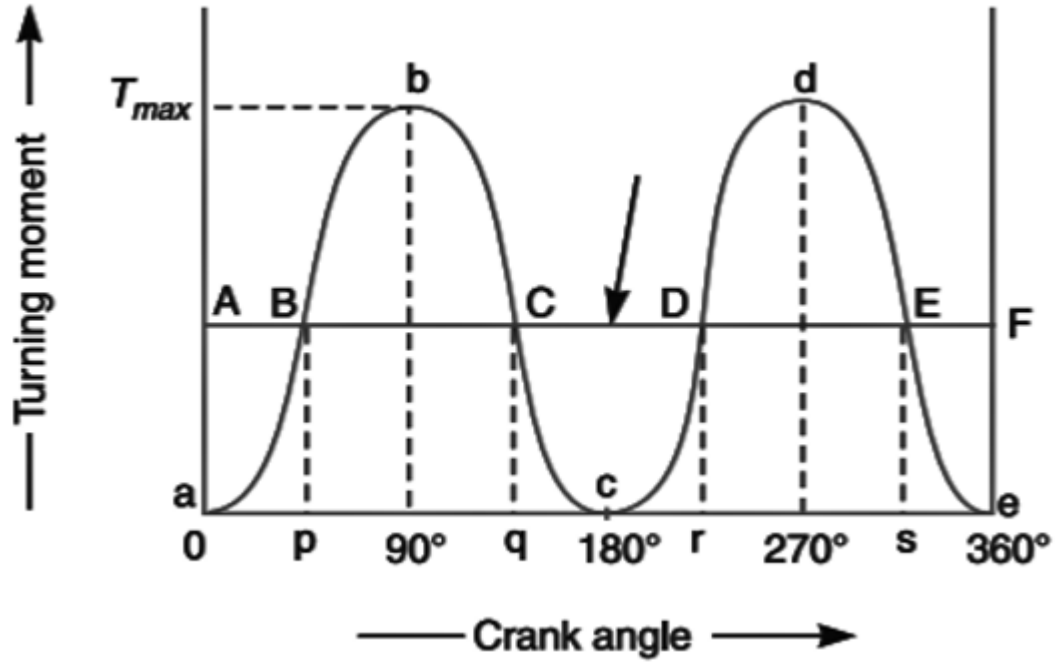
Which of the following mechanism is an approximately straight-line motion mechanism?

(A)
Hart’s mechanism
(B)
Watt’s mechanism
(C)
Scott Russell’s mechanism
(D)
Peaucellier mechanism

Ans: “Watt’s mechanism”

72.

In the figure given below, the areas BbC, CcD represent _____



(A)
Power generated
(B)
Power lost
(C)
Fluctuation of energy
(D)
Change in momentum

Ans: “Fluctuation of energy”

73.
Determine the couple moment acting on the triangular plane shown.

(A)
1600Nm
(B)
100Nm
(C)
2600Nm
(D)
600Nm

Ans: “2600Nm”

74.
The source term in the momentum equation is _____

(A)
Pressure force
(B)
Body forces
(C)
Viscous force
(D)
Acceleration

Ans: “Body forces”

75.
In Automobile, what does SUV stand for?
(A)

Sport Utility Vehicle
(B)
Sub-urban Utility Vehicles
(C)
Short Urban Vehicles
(D)
Super Utility Vehicles

Ans: "Sport Utility Vehicle"

76.

The relation between pressure and velocity in an inviscid, incompressible flow is given by _____

(A)
p = constant
(B)
$p + 0.5\rho*V^2$ = constant
(C)
$0.5\rho*V^2 = 0$
(D)
$p + 0.5\rho*V^2 = 0$

Ans: "$p + 0.5\rho*V^2$ = constant"

77.
Fuel injection in an SI engine _____ volumetric efficiency.
(A)
increases
(B)
decreases
(C)
maintains constant
(D)
Maintains the constant equipments

Ans: "increases"

78.

The pressure of supercharger used is _____

(A)
1.0 to 1.3 bar
(B)
1.2 to 1.4 bar
(C)
1.3 to 1.5 bar
(D)
1.3 to 1.9 bar

Ans: “1.3 to 1.5 bar”

79.
In which of the following, smoke is produced maximum?

(A)
Solid fuel
(B)
Liquid fuel
(C)
Gaseous fuel
(D)
Coal gas

Ans: “Solid fuel”

80.
Which of the following fuel does not requires excess air for its combustion?
(A)
Coal
(B)
Cow-dunk cake
(C)
Diesel
(D)
Charcoal

Ans: “Diesel”

81.
What is the percentage at which rated power from biogas in petrol engine can be developed?

(A)
45%
(B)
65%
(C)
75%
(D)
85%

Ans: “85%”

82.

If petrol is used in a diesel engine, then _____

(A)
low power will be produced
(B)
efficiency will be low
(C)
higher knocking will occur
(D)
black smoke will be produced

Ans: “higher knocking will occur”

83.

Select the incorrect statement from the following option.

(A)
Lubricant keeps out dirt
(B)
Lubricant act as a seal
(C)

Lubricant transmit fluid power
(D)
Lubricant enhance corrosion

Ans: “Lubricant enhance corrosion”

84.
Industrial safety management if that branch of management which is concerned with _____ hazards from the industries.

(A)
Cutting
(B)
Shaping
(C)
joining
(D)
Controlling

Ans: “Controlling”

85.
Buying according to the requirements is called _____

(A)
Seasonal Buying
(B)
Hand to mouth buying
(C)
Scheduled Buying
(D)
Tender Buying

Ans: “Hand to mouth buying”

86.

Acceptance sampling is used in

(A)

control production
(B)
main production
(C)
less production
(D)
Mass production

Ans: “less production”

87.

Which of the following alloying element increase hardness?

(A)
Silicon
(B)
Sulphur
(C)
Nickel
(D)
Titanium

Ans: “Sulphur”

88.

Eutectoid steel is heated at _____
(A)
150^{o}C
(B)
450^{o}C
(C)
750^{o}C
(D)
950^{o}C

Ans: “750^{o}C”

89.

For Brinell hardness test _____ is kept constant.
(A)
P
(B)
P/D
(C)
P*D
(D)
P/D^2

Ans: "P/D^2 "

90.

what is the solidus temperature of tin-lead solders?

(A)
183
(B)
297
(C)
444
(D)
604

Ans: "183"

91.

How does the arc voltage V depends upon the length of arc L?

(A)
V = f(L)
(B)
V = 1/f(L)
(C)
V = f(L2)
(D)
V = f(√L)

Ans: “V = f(L)”

92.

what temperature, does fusion welding takes place?

(A)
850°C
(B)
900°C
(C)
950°C
(D)
1000°C

Ans: “900°C”

93.
The function of high frequency unit is in TIG welding

(A)
start the Arc
(B)
increase in Arc Voltage
(C)
increase in Voltage
(D)
to keep the current constant

Ans: “start the Arc”

94.

The contact tip in MIG welding, normally made of

(A)
Iron
(B)
Aluminium
(C)

Copper
(D)
Zinc

Ans: “Copper”

95.
In a reciprocating steam engine, which of the following forms a kinematic link?

(A)
cylinder and piston
(B)
piston and connecting rod
(C)
crankshaft and flywheel
(D)
flywheel and engine frame

Ans: “crankshaft and flywheel”

96.
Which of the following is the result of a reduction in operating pressure in the Air refrigeration cycle?

(A)
decrease in C.O.P.
(B)
always decreases
(C)
increase in C.O.P.
(D)
no change in C.O.P.

Ans: “increase in C.O.P.”

97.
What is the alternate name for thermodynamic wet-bulb temperature?
(A)
Isobaric WBT
(B)

Isobaric Saturation Temperature
(C)
Adiabatic WBT
(D)
Adiabatic Saturation Temperature

Ans: "Adiabatic Saturation Temperature"

98.

What is worm lead in worm and worm gear?

(A)
N_w x $2p_x$
(B)
N_w x $4p_x$
(C)
N_w x p_x
(D)
N_w / p_x

Ans: "N_w x p_x"

99.

How are systematic errors removed usually for an instrument?

(A)
By replacing it
(B)
By re-calibrating it
(C)
By using a repairing service
(D)
By not using it for some time

Ans: "By re-calibrating it"

100.

Which is the latest ISO 9001 version in the ISO 9000 family?

(A)
ISO 9001:1994
(B)
ISO 9001:2000
(C)
ISO 9001:2008
(D)
ISO 9001:2015

Ans: “ISO 9001:2015”