



Uttar Pradesh Metro Rail Corporation Limited

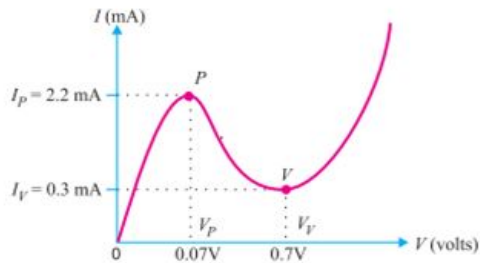
उत्तर प्रदेश मेट्रो रेल कॉर्पोरेशन लिमिटेड

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Participant ID	www.allexamdost.com
Participant Name	
Test Center Name	www.allexamdost.com
Test Date	17/04/2021
Test Time	12:00 PM - 2:00 PM
Subject	Station Controller cum Train Operator (SCTO)
Max Marks	140

Section : Technical

Q.1 Identify the device whose V-I characteristics are shown in the given image.



- Ans
- A. Tunnel diode
 - B. LED
 - C. Photo diode
 - D. MOSFET

Question Type : MCQ
Question ID : 673502859
Status : Not Answered
Chosen Option : --

Q.2 The voltage and current of a single phase circuit are related by pair of equations: $2V + 3I = 530$; $V - I = 190$. If the power factor is 0.8, the power of the circuit is:

- Ans
- A. 5.28 kW
 - B. 2.64 kW
 - C. 3.3 kW
 - D. 6.6 kW

Question Type : MCQ
Question ID : 673502918
Status : Answered
Chosen Option : 3

Q.3 ALU, control unit and _____ are the three main units of an 8085 microprocessor.

- Ans
- A. RAM
 - B. ROM
 - C. LED display
 - D. registers

Question Type : MCQ
Question ID : 673502868
Status : Answered
Chosen Option : 4

Q.4 Which of the following materials is used in resistance thermometers?

- Ans
- A. Gold
 - B. Kanthal
 - C. Platinum
 - D. Nichrome

Question Type : MCQ
Question ID : 673502875
Status : Answered
Chosen Option : 3

Q.5 Compute the total annual charge on installation costing of ₹2,00,000/- to buy and install if the estimated life is 20 years with no scrap value. The interest rate is 5% compounded annually.

- Ans
- A. ₹10000
 - B. ₹15760
 - C. ₹12250
 - D. ₹5760

Question Type : MCQ
Question ID : 673502852
Status : Answered
Chosen Option : 1

Q.6 A synchronous motor is said to be _____ and draws a _____ current when the voltage is less than the back EMF.

- Ans
- A. over excited; lagging
 - B. under excited; leading
 - C. over excited; leading
 - D. under excited; lagging

Question Type : MCQ
Question ID : 673502849
Status : Answered
Chosen Option : 3

Q.7 The peak inverse voltage (PIV) rating of a half wave rectifier, having a maximum value of input as 100 V, is minimum:

- Ans
- A. 50 V
 - B. 100 V
 - C. $\frac{100}{\sqrt{2}}$ V
 - D. 200 V

Question Type : MCQ
Question ID : 673502907
Status : Answered
Chosen Option : 2

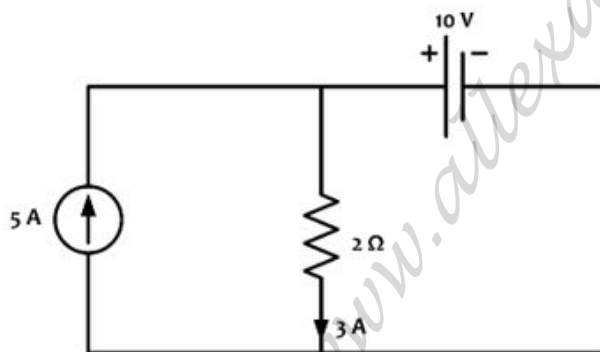
Q.8 Consider the following statements and select the most appropriate option for them.

A: If an ammeter is connected across a circuit element, it will get damaged.
B: If a voltmeter is connected in series with a circuit, it will get damaged.

- Ans
- A. B is TRUE, but A is FALSE.
 - B. A is TRUE, but B is FALSE.
 - C. Both the statements are TRUE.
 - D. Both the statements are FALSE.

Question Type : MCQ
Question ID : 673502901
Status : Answered
Chosen Option : 3

Q.9 The power absorbed by a 10 V source in the given circuit is:



- Ans
- A. 20 W
 - B. 10 W
 - C. 50 W
 - D. 30 W

Question Type : MCQ
Question ID : 673502897
Status : Not Attempted and Marked For Review
Chosen Option : --

Q.10 Which of the following statements is correct regarding bridges available for inductance measurement?

- Ans A. Hay's bridge is used for coils having $Q > 10$, whereas Maxwell's bridge is used for coils having $1 < Q < 10$.
- B. Hay's bridge is used for coils having $Q < 10$, whereas Anderson's bridge is used for very high Q coils.
- C. Hay's bridge is used for coils having $Q < 10$, whereas Anderson's bridge is used for very low Q coils.
- D. Hay's bridge is used for coils having $Q > 10$, whereas Maxwell's bridge is used for very high Q coils.

Question Type : **MCQ**
Question ID : **673502914**
Status : **Answered**
Chosen Option : **1**

Q.11 Which of the following configurations is also called an emitter follower?

- Ans A. Common Emitter
- B. Op-Amp
- C. Common Collector
- D. Common Base

Question Type : **MCQ**
Question ID : **673502927**
Status : **Answered**
Chosen Option : **3**

Q.12 Starting just after unknown resistance, if three known resistances of Kelvin's bridge are X , $2X$ and $4X$, respectively, then the value of unknown resistance is:

- Ans A. X
- B. $2X$
- C. $\frac{X}{2}$
- D. $8X$

Question Type : **MCQ**
Question ID : **673502913**
Status : **Answered**
Chosen Option : **2**

Q.13 Latency measures the delay in data transmission across the bus. Which of the following instrumentation buses has the best latency specification that is minimum delay?

- Ans A. PCI
- B. Ethernet
- C. USB
- D. GPIB

Question Type : **MCQ**
Question ID : **673502932**
Status : **Answered**
Chosen Option : **3**

Q.14 Impedance offered to the direct current by a capacitor filter used along with rectifiers having a capacitance of C farads is:

- Ans A. infinity
 B. zero
 C. $2\pi fC$
 D. unity

Question Type : MCQ
Question ID : 673502858
Status : Answered
Chosen Option : 1

Q.15 Once a signal is sensed, before transmitting, many a times linear or non-linear operations are performed on the signal. This process is known as:

- Ans A. signal conditioning
 B. impedance matching
 C. data manipulation
 D. data termination

Question Type : MCQ
Question ID : 673502920
Status : Not Answered
Chosen Option : --

Q.16 Which of the following statements is FALSE regarding semiconductor devices?

- Ans A. Current and holes move opposite to each other
 B. Electrons and holes move opposite to each other
 C. Holes are majority charge carriers in p-type semiconductors
 D. Current and electrons move opposite to each other

Question Type : MCQ
Question ID : 673502905
Status : Answered
Chosen Option : 1

Q.17 An 8086 microprocessor is designed to have _____ data lines and _____ address lines.

- Ans A. 12; 16
 B. 16; 16
 C. 16; 20
 D. 20; 16

Question Type : MCQ
Question ID : 673502883
Status : Not Answered
Chosen Option : --

Q.18 Input voltage and input current of a common emitter configuration BJT circuit is:

- Ans
- A. V_{BE} and I_B
 - B. V_{CE} and I_C
 - C. V_{CE} and I_B
 - D. V_{BE} and I_C

Question Type : MCQ

Question ID : 673502906

Status : Answered

Chosen Option : 4

Q.19 Which of the following is an automatic control system?

- Ans
- A. TV remote control
 - B. Hair dryer
 - C. Autonomous car
 - D. Electric hand drier

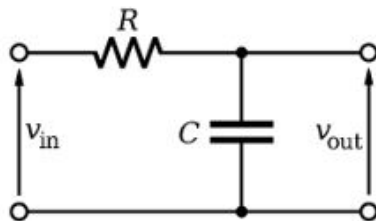
Question Type : MCQ

Question ID : 673502891

Status : Answered

Chosen Option : 3

Q.20 The transfer function of the system shown below is:



- Ans
- A. $\frac{V_{out}(s)}{V_{in}(s)} = \frac{R}{Cs + 1}$
 - B. $\frac{V_{out}(s)}{V_{in}(s)} = RCs + 1$
 - C. $\frac{V_{out}(s)}{V_{in}(s)} = \frac{1}{RCs + 1}$
 - D. $\frac{V_{out}(s)}{V_{in}(s)} = \frac{C}{RCs + 1}$

Question Type : MCQ

Question ID : 673502873

Status : Answered

Chosen Option : 3

Q.21 The value of a series resistor to be connected in series to limit the current through a LED to 20 mA, assuming a forward voltage of 1.6 V when connected to a 10 V supply, is:

- Ans A. 420 Ω
 B. 260 Ω
 C. 620 Ω
 D. 240 Ω

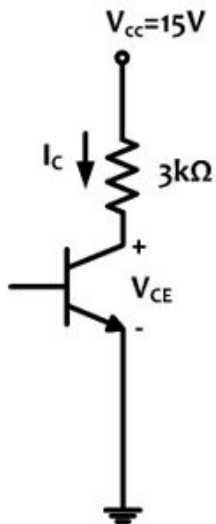
Question Type : MCQ
Question ID : 673502860
Status : Answered
Chosen Option : 1

Q.22 Which of the following instrument control buses is called 'IEEE-488 bus'?

- Ans A. PCI
 B. Ethernet
 C. USB
 D. GPIB

Question Type : MCQ
Question ID : 673502924
Status : Not Answered
Chosen Option : --

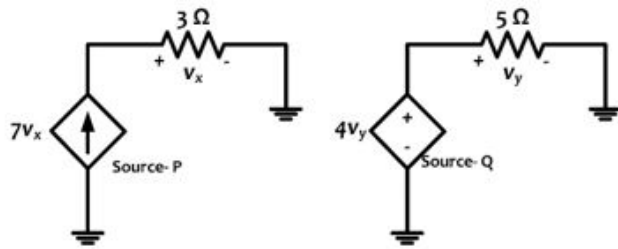
Q.23 In the following circuit, if $I_C = 3.5$ mA, then V_{CE} is:



- Ans A. 10.5 V
 B. 10 V
 C. 5 V
 D. 4.5 V

Question Type : MCQ
Question ID : 673502929
Status : Answered
Chosen Option : 4

Q.24 Which of the following is represented in the given figure?



Ans A.

Source-P is a voltage dependent current source and Source-Q is a current dependent voltage source.

B.

Source-P is a current dependent current source and Source-Q is a current dependent voltage source.

C.

Source-P is a voltage dependent current source and Source-Q is a voltage dependent voltage source.

D.

Source-P is a current dependent current source and Source-Q is a voltage dependent voltage source.

Question Type : MCQ

Question ID : 673502900

Status : Answered

Chosen Option : 3

Q.25 In a circuit, at a node, three branches meet. The node has an incoming current of 2 A and an outgoing current of 3 A from two of these branches. The third branch will have an:

Ans A. outgoing current of -1 A

B. incoming current of -1 A

C. incoming current of 5 A

D. outgoing current of 5 A

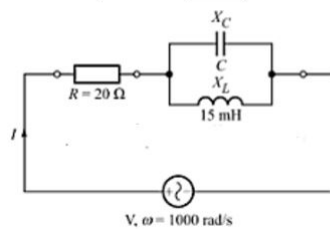
Question Type : MCQ

Question ID : 673502925

Status : Answered

Chosen Option : 2

Q.26 In series with a parallel combination of a capacitor and inductor, a resistor of $20\ \Omega$ (as shown in the given figure) is connected. If the current drawn from the supply is lagging voltage by 45° and the angular frequency is $1000\ \text{rad/s}$, the value of capacitance is _____.



Ans A. $16.67\ \mu\text{F}$

B. $13.33\ \mu\text{F}$

C. $12.33\ \mu\text{F}$

D. $8.67\ \mu\text{F}$

Question Type : MCQ

Question ID : 673502865

Status : Not Answered

Chosen Option : --

Q.27 When the gate signal is removed in a thyristor, it will remain in its forward conduction mode. This characteristic of the thyristor is called _____.

- Ans
- A. GATE-on
 - B. ever conducting
 - C. latching
 - D. off blocking

Question Type : MCQ
Question ID : 673502843
Status : Answered
Chosen Option : 3

Q.28 A moving coil instrument having $50\ \Omega$ resistance shows full-scale deflection with 2 mA. If a resistance of $0.2\ \Omega$ is added in parallel to extend its range, then its range is extended to:

- Ans
- A. 502 mA
 - B. 1002 mA
 - C. 202 mA
 - D. 251 mA

Question Type : MCQ
Question ID : 673502903
Status : Answered
Chosen Option : 1

Q.29 For contactless body temperature measurement, advanced thermometers are used. They are based on:

- Ans
- A. alpha particles
 - B. laser beams
 - C. ultra-violet radiation
 - D. infrared radiation

Question Type : MCQ
Question ID : 673502922
Status : Answered
Chosen Option : 4

Q.30 Average value of the waveform shown below is _____.



- Ans
- A. 10 V
 - B. 6.67 V
 - C. 3.33 V
 - D. 20 V

Question Type : MCQ
Question ID : 673502887
Status : Answered
Chosen Option : 1

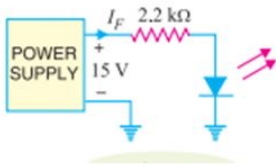
Q.31 Identify the two-input logic gate with inputs A and B and output Q, whose truth table is given here.

Truth Table		
A	B	Q
0	0	0
0	1	1
1	0	1
1	1	0

- Ans
- A. X-NOR
 - B. NAND
 - C. XOR
 - D. NOR

Question Type : MCQ
Question ID : 673502893
Status : Answered
Chosen Option : 3

Q.32 What is the current through the LED in the following circuit, assuming a voltage drop of 2 V across it?



- Ans
- A. 8.72 mA
 - B. 3.72 mA
 - C. 5.91 mA
 - D. 5.27 mA

Question Type : MCQ
Question ID : 673502886
Status : Answered
Chosen Option : 3

Q.33 A voltmeter has a scale from -15 V to 5 V. Its span is:

- Ans
- A. -15 V
 - B. 20 V
 - C. 5 V
 - D. 15 V

Question Type : MCQ
Question ID : 673502898
Status : Answered
Chosen Option : 2

Q.34 To optimise the economic limit, power factor is improved by installing _____.

- Ans
- A. static capacitors
 - B. energy meters
 - C. kVA rating devices
 - D. transformers

Question Type : MCQ
Question ID : 673502853
Status : Answered
Chosen Option : 1

Q.35 A current $i(t) = 2 + 8 \sin(\omega t)$ is measured using a moving iron type meter. The value read by it is:

- Ans A. 6 A
 B. 8 A
 C. $\sqrt{32}$ A
 D. 2 A

Question Type : MCQ
Question ID : 673502916
Status : Answered
Chosen Option : 1

Q.36 Which of the following is NOT an automatic control system?

- Ans A. Sun tracker solar system
 B. Thermostat heater
 C. Electric hand drier
 D. Voltage stabiliser

Question Type : MCQ
Question ID : 673502871
Status : Answered
Chosen Option : 3

Q.37 The phasor values of voltage and current are:

$$V = 100 \angle 30^\circ ; I = 10 \angle -45^\circ$$

What is the phase difference between them?

- Ans A. 15°
 B. 45°
 C. 30°
 D. 75°

Question Type : MCQ
Question ID : 673502919
Status : Answered
Chosen Option : 4

Q.38 The barrier potential of a germanium semiconductor is approximately:

- Ans A. 0.3 V
 B. 1 V
 C. 1.2 V
 D. 0.7 V

Question Type : MCQ
Question ID : 673502857
Status : Answered
Chosen Option : 1

Q.39 Energy lost due to hysteresis during each cycle in the core of a transformer working at 50 Hz is 6 J. What will be the power loss due to hysteresis?

- Ans A. 300 W
 B. 200 W
 C. 600 W
 D. 100 W

Question Type : MCQ
Question ID : 673502877
Status : Answered
Chosen Option : 3

Q.40 Which of the following logical expressions is INCORRECT?

- Ans A. $\overline{A + B} = \bar{A} \bar{B}$
 B. $\overline{AB} = \bar{A} + \bar{B}$
 C. $1 + A = 1$
 D. $AB + A = B$

Question Type : MCQ
Question ID : 673502878
Status : Answered
Chosen Option : 3

Q.41 Which of the following devices is called a 'voltage-controlled capacitor'?

- Ans A. Shockley diode
 B. Photo diode
 C. Varactor diode
 D. LED

Question Type : MCQ
Question ID : 673502861
Status : Answered
Chosen Option : 3

Q.42 Which of the following is the correct formula for form factor of an alternating voltage waveform?

- Ans A. $\frac{\text{rms value}}{\text{peak value}}$
 B. $\frac{\text{average value}}{\text{rms value}}$
 C. $\frac{\text{peak value}}{\text{average value}}$
 D. $\frac{\text{rms value}}{\text{average value}}$

Question Type : MCQ
Question ID : 673502864
Status : Answered
Chosen Option : 4

Q.43 In an asynchronous counter using D flip-flop, which of the following is true?

- Ans A. Output of one flop is given as the clock to the next flip-flop.
 B. Same clock signal is given to all flip-flops.
 C. Clock signal is derived from independent signal generators.
 D. Alternate flip-flops are given the same clock signal.

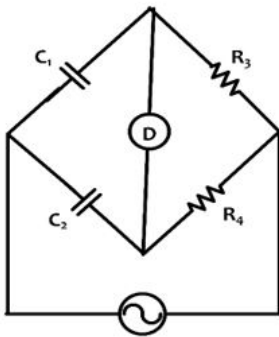
Question Type : MCQ
Question ID : 673502884
Status : Not Answered
Chosen Option : --

Q.44 Which of the following is the normal cell voltage of a lithium ion battery?

- Ans A. 2.5 V
 B. 1.2 V
 C. 3.6 V
 D. 1.5 V

Question Type : MCQ
Question ID : 673502866
Status : Answered
Chosen Option : 3

Q.45 Which of the following options is true for the balanced condition of the given circuit?



- Ans A. $C_1 = C_2 R_3 R_4$
 B. $C_1 = \frac{R_3 R_4}{C_2}$
 C. $C_2 = \frac{C_1 R_4}{R_3}$
 D. $C_2 = \frac{C_1 R_3}{R_4}$

Question Type : MCQ
Question ID : 673502915
Status : Answered
Chosen Option : 3

Q.46 If a voltmeter has a scale from -5 V to 15 V and can only read integer values of voltages, its resolution is:

- Ans
- A. 15 V
 - B. 1 V
 - C. 20 V
 - D. -5 V

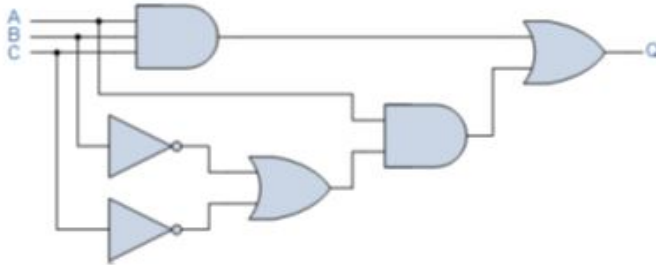
Question Type : MCQ
Question ID : 673502902
Status : Answered
Chosen Option : 2

Q.47 If the deflecting torque is A, controlling torque is B and damping torque is C, then for an indicating type instrument:

- Ans
- A. $A + C = B$
 - B. $B = C$
 - C. $A = C$
 - D. $A = B$

Question Type : MCQ
Question ID : 673502911
Status : Answered
Chosen Option : 4

Q.48 What is the simplified logical expression of the given diagram?



- Ans
- A. $Q = AB + A\bar{B} + A\bar{C}$
 - B. $Q = ABC + A\bar{B} + A\bar{C}$
 - C. $Q = ABC + A(B + C)$
 - D. $Q = ABC + A\bar{B} + A\bar{C}$

Question Type : MCQ
Question ID : 673502881
Status : Not Answered
Chosen Option : --

Q.49 Which of the following is NOT a time domain specification of a second order system?

- Ans
- A. Settling time
 - B. Time constant
 - C. Maximum overshoot
 - D. Rise time

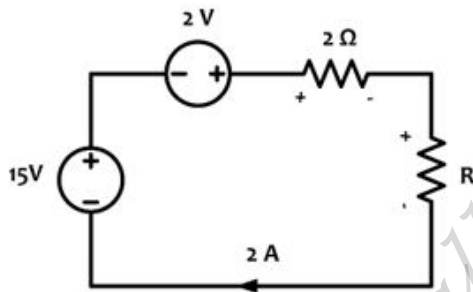
Question Type : MCQ
Question ID : 673502874
Status : Not Answered
Chosen Option : --

Q.50 Which of the following materials has an energy gap of more than 3 eV between the valence band and conduction band?

- Ans
- A. Insulator
 - B. Semiconductor
 - C. Conductor
 - D. Superconductor

Question Type : MCQ
Question ID : 673502876
Status : Answered
Chosen Option : 1

Q.51 In the given figure, the voltage across R is:



- Ans
- A. 13 V
 - B. 9 V
 - C. 17 V
 - D. 21 V

Question Type : MCQ
Question ID : 673502899
Status : Answered
Chosen Option : 1

Q.52 Under which of the following categories of quality costs would you classify 'calibration of measuring and test equipment'?

- Ans
- A. Cost of poor quality : external failure costs
 - B. Cost of poor quality : internal failure costs
 - C. Cost of good quality : appraisal costs
 - D. Cost of good quality : prevention costs

Question Type : MCQ
Question ID : 673502882
Status : Not Answered
Chosen Option : --

Q.53 A shift register using flip-flops is called a _____.

- Ans
- A. universal shift register
 - B. flip-flop shift register
 - C. dynamic shift register
 - D. static shift register

Question Type : MCQ
Question ID : 673502896
Status : Not Answered
Chosen Option : --

Q.54 In AC to AC converters, voltage is controlled using forced commutation by _____ .

- Ans
- A. Gated Off Transistors Gated Turn-on Transistors
 - B. Gate Off Triode Gate Turn-on Triodes
 - C. Gate Bipolar Transistors Gate Terminal Open Thyristors
 - D. Gate Turn-off Thyristors (GTO)

Question Type : MCQ
Question ID : 673502846
Status : Answered
Chosen Option : 4

Q.55 A JFET has a drain current of 5 mA. If $I_{DSS} = 10 \text{ mA}$ and $V_{GS(\text{cut off})} = -6 \text{ V}$, the value of V_{GS} will be:

- Ans
- A. -3.16 V
 - B. 3.16 V
 - C. -1.76 V
 - D. 1.76 V

Question Type : MCQ
Question ID : 673502863
Status : Not Answered
Chosen Option : --

Q.56 Two coils with a coefficient of coupling of 0.5 between them are connected in series so as to magnetise in the same direction and in the opposite direction. The corresponding values of total inductances are 1.9 H and 0.7 H, respectively. Identify the self-inductances of the two coils.

- Ans
- A. 0.8 H and 0.6 H
 - B. 0.9 H and 0.4 H
 - C. 0.6 H and 0.5 H
 - D. 0.5 H and 0.9 H

Question Type : MCQ
Question ID : 673502867
Status : Answered
Chosen Option : 2

Q.57 The material used as an electric heating element is:

- Ans
- A. copper
 - B. nichrome
 - C. tungsten
 - D. aluminium

Question Type : MCQ
Question ID : 673502892
Status : Answered
Chosen Option : 2

Q.58 The DC voltage transfer of a push-pull converter is _____.

- Ans
- A. n/D ; D: duty cycle, n: ratio of primary to secondary winding
 - B. D/n ; D: duty cycle, n: ratio of primary to secondary winding
 - C. $2D/n$; D: duty cycle, n: ratio of primary to secondary winding
 - D. $2n/D$; D: duty cycle, n: ratio of primary to secondary winding

Question Type : MCQ
Question ID : 673502845
Status : Not Answered
Chosen Option : --

Q.59 The stator of a three-phase induction motor has six slots per pole per phase. What is the total number of stator poles produced?

- Ans
- A. 12
 - B. 6
 - C. 18
 - D. 3

Question Type : MCQ
Question ID : 673502850
Status : Answered
Chosen Option : 3

Q.60 For an ideal OP-AMP, which of the following is correct?

- Ans
- A. Zero output impedance and zero open loop gain
 - B. Infinite output impedance and zero open loop gain
 - C. Zero output impedance and infinite open loop gain
 - D. Infinite output impedance and infinite open loop gain

Question Type : MCQ
Question ID : 673502921
Status : Answered
Chosen Option : 2

Q.61 The 8251A programmable communication chip is designed for:

- Ans
- A. synchronous parallel data communication only
 - B. synchronous serial data communication only
 - C. synchronous and asynchronous serial data communication
 - D. synchronous and asynchronous parallel data communication

Question Type : MCQ
Question ID : 673502889
Status : Not Answered
Chosen Option : --

Q.62 For an ideal OP-AMP, which of the following is correct?

- Ans
- A. Infinite input impedance and zero bandwidth
 - B. Infinite input impedance and infinite bandwidth
 - C. Zero input impedance and zero bandwidth
 - D. Zero input impedance and infinite bandwidth

Question Type : MCQ
Question ID : 673502930
Status : Answered
Chosen Option : 4

Q.63 What is the average value of output of a chopper with duty ratio 0.5 and source voltage 50 V?

- Ans
- A. 200 V
 - B. 25 V
 - C. 100 V
 - D. 50 V

Question Type : MCQ
Question ID : 673502847
Status : Answered
Chosen Option : 2

Q.64 In a common base connection, if the current amplification factor is 0.9 and the emitter current is 1 mA, then the base current is given is:

- Ans
- A. 0.1 mA
 - B. 0.9 mA
 - C. 1.9 mA
 - D. 1.11 mA

Question Type : MCQ
Question ID : 673502862
Status : Not Answered
Chosen Option : --

Q.65 If semiconductor X has an energy band gap of 0.67 eV, whereas semiconductor Y has an energy band gap of 1.1 eV, then:

- Ans
- A. X is germanium arsenide; Y is silicon
 - B. X is silicon; Y is germanium
 - C. X is germanium; Y is silicon
 - D. X is silicon; Y is germanium arsenide

Question Type : MCQ
Question ID : 673502928
Status : Answered
Chosen Option : 2

Q.66 A very standard bus for controlling electronic instruments with a computer is GPIB. Its full form is:

- Ans
- A. General Purpose Input Bus
 - B. General Purpose Infrastructure Bus
 - C. General Purpose Interface Bus
 - D. General Purpose Instrument Bus

Question Type : MCQ
Question ID : 673502931
Status : Answered
Chosen Option : 3

Q.67 Which of the following has the largest number of free electrons?

- Ans
- A. Intrinsic semiconductor
 - B. Extrinsic semiconductor
 - C. Insulator
 - D. Conductor

Question Type : MCQ
Question ID : 673502856
Status : Answered
Chosen Option : 4

Q.68 The Fermi level for an intrinsic semiconductor lies:

- Ans
- A. midway in the forbidden gap
 - B. in the boundary of the conduction band and forbidden gap
 - C. in the valance band
 - D. in the conduction band

Question Type : MCQ
Question ID : 673502885
Status : Answered
Chosen Option : 1

Q.69 'Capability evaluations' come under which of the following categories of quality costs?

- Ans
- A. Cost of Poor Quality : External Failure Costs
 - B. Cost of Good Quality : Prevention Costs
 - C. Cost of Good Quality : Appraisal Costs
 - D. Cost of Poor Quality : Internal Failure Costs

Question Type : MCQ
Question ID : 673502894
Status : Not Answered
Chosen Option : --

Q.70 Number of NAND gates required to realise a half adder circuit is _____.

- Ans
- A. six
 - B. four
 - C. three
 - D. five

Question Type : MCQ
Question ID : 673502879
Status : Not Answered
Chosen Option : --

Q.71 So as to eliminate the effect of lead and contact resistances while measuring low valued resistances, the _____ is used.

- Ans
- A. Kelvin double bridge
 - B. Hay's bridge
 - C. Carey Foster bridge
 - D. Owen's bridge

Question Type : MCQ
Question ID : 673502912
Status : Answered
Chosen Option : 1

Q.72 In a pulse-width modulation (PWM) DC-DC converter, the rectangular voltage and current waveforms limit _____.

- Ans
- A. buck of the circuit
 - B. higher drop at load
 - C. boost of the circuit
 - D. practically operating frequencies

Question Type : MCQ
Question ID : 673502844
Status : Not Answered
Chosen Option : --

Q.73 For a BJT, if the collector and emitter currents are 147 mA and 150 mA, respectively, then the current ratio (β) is:

- Ans
- A. 0.98
 - B. 0.49
 - C. 49
 - D. 98

Question Type : MCQ
Question ID : 673502909
Status : Answered
Chosen Option : 1

Q.74 The register used to store the memory address location of the next instruction to be executed is called:

- Ans
- A. flags
 - B. accumulator
 - C. address register
 - D. program counter

Question Type : MCQ
Question ID : 673502888
Status : Answered
Chosen Option : 4

Q.75 In which of the following modes in 8255A PPI can Port A be used as a bidirectional data bus?

- Ans
- A. Mode 2
 - B. Mode 0
 - C. BSR Mode
 - D. Mode 1

Question Type : MCQ
Question ID : 673502869
Status : Not Answered
Chosen Option : --

Q.76 In an 8086 microprocessor, in order to enable higher order byte of data, _____ signal is used.

- Ans
- A. $\overline{\text{DEN}}$
 - B. DT/R
 - C. $\overline{\text{BHE}}$
 - D. ALE

Question Type : MCQ
Question ID : 673502895
Status : Not Answered
Chosen Option : --

Q.77 Which of the following will be done in an 8085 microprocessor when an instruction LXI H 2070H is executed?

- Ans A. 20 H is loaded in H register and 70 H is loaded in L register.
 B. 70 H is loaded in H register and 20 H is loaded in L register.
 C. 2070H is loaded in H register.
 D. Content of the memory 2070H is loaded in H register.

Question Type : MCQ
Question ID : 673502870
Status : Answered
Chosen Option : 2

Q.78 In the context of core type induction furnace, consider the following:

P) It suffers from pinching effect.
Q) It is suitable for intermittent service.

- Ans A. Both P and Q are incorrect
 B. P is incorrect and Q is correct
 C. P is correct, Q is incorrect
 D. Both P and Q are correct

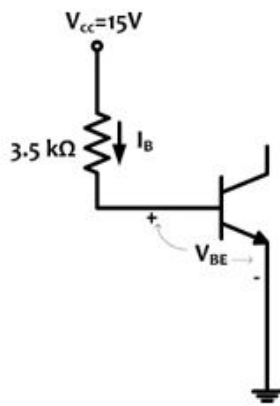
Question Type : MCQ
Question ID : 673502854
Status : Answered
Chosen Option : 4

Q.79 HART is a digital communication protocol for sending and receiving information. It uses which of the following current loop standards?

- Ans A. 40 - 100 mA
 B. 120 - 140 mA
 C. 50 - 80 mA
 D. 4 - 20 mA

Question Type : MCQ
Question ID : 673502923
Status : Not Answered
Chosen Option : --

Q.80 In the given circuit, if $V_{BE} = 1V$, then I_B is:



- Ans
- A. 2 mA
 - B. 4 mA
 - C. 0.2 mA
 - D. 0.4 mA

Question Type : MCQ

Question ID : 673502910

Status : Answered

Chosen Option : 2

Q.81 The gray code equivalent of the decimal number 5 is _____.

- Ans
- A. 0101
 - B. 1100
 - C. 1000
 - D. 0111

Question Type : MCQ

Question ID : 673502880

Status : Answered

Chosen Option : 1

Q.82 For a 20-kVA transformer, the iron and copper losses at full load are 300 W and 250 W, respectively. What is the transformer efficiency under full load at unity power factor?

- Ans
- A. 98.76%
 - B. 98.52%
 - C. 48.66%
 - D. 97.32%

Question Type : MCQ

Question ID : 673502848

Status : Not Answered

Chosen Option : --

Q.83 If semiconductor *M* has a knee voltage of 0.7 V, whereas semiconductor *N* has a knee voltage of 0.3 V, then:

- Ans
- A. *M* is germanium arsenide; *N* is silicon
 - B. *M* is silicon; *N* is germanium
 - C. *M* is silicon; *N* is germanium arsenide
 - D. *M* is germanium; *N* is silicon

Question Type : MCQ

Question ID : 673502908

Status : Answered

Chosen Option : 2

Q.84 The final value of a system whose transfer function is represented by $F(s) = \frac{s+1}{s^2+2s+5}$ is:

- Ans
- A. 0.2
 - B. unity
 - C. 0
 - D. infinity

Question Type : MCQ

Question ID : 673502872

Status : Not Answered

Chosen Option : --

Q.85 During the testing of an energy meter, what are the required voltage and current conditions for a creep test?

- Ans
- A. Applied voltage: 110% of marked value of voltage; Applied current: open circuit
 - B. Applied voltage: 110% of marked value of voltage; Applied current: 0.5% of marked value of current
 - C. Applied voltage: marked value of voltage; Applied current: 0.5% of marked value of current
 - D. Applied voltage: marked value of voltage; Applied current: open circuit

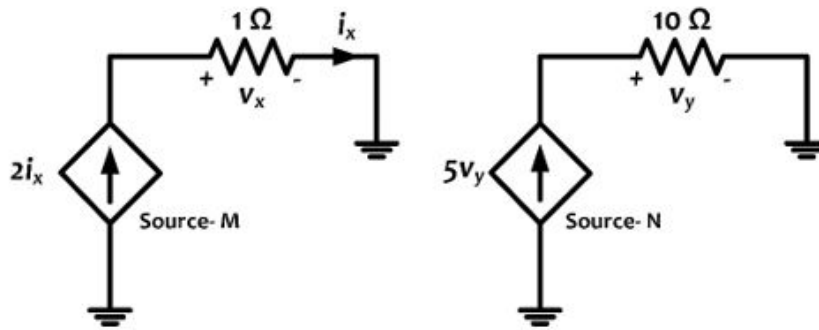
Question Type : MCQ

Question ID : 673502917

Status : Answered

Chosen Option : 2

Q.86 Which of following is represented in the given figure?



Ans A.

Source-M is a current dependent current source and Source-N is a voltage dependent current source.

B.

Source-M is a current dependent current source and Source-N is a voltage dependent voltage source.

C.

Source-M is a voltage dependent current source and Source-N is a current dependent current source.

D.

Source-M is a voltage dependent current source and Source-N is a voltage dependent current source.

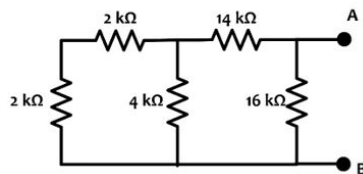
Question Type : MCQ

Question ID : 673502926

Status : Answered

Chosen Option : 1

Q.87 A multi-meter in resistance measurement mode is used in the given circuit across terminals A and B. Which of the following is the best setting to display the measured value on a 3-digit screen?



Ans A. 10 k Ω

B. 10 M Ω

C. 1 Ω

D. 1 k Ω

Question Type : MCQ

Question ID : 673502904

Status : Answered

Chosen Option : 4

Q.88 In a thyristor converter drive, during _____ the firing angle is maintained to achieve controlled and predictable deceleration at all times.

Ans A. chopping

B. surging

C. controlled modulation

D. braking

Question Type : MCQ

Question ID : 673502855

Status : Answered

Chosen Option : 4

Q.89 In 8085 microprocessors, MVI A, 23H is an example of which addressing mode?

- Ans
- A. Register addressing
 - B. Direct addressing
 - C. Immediate addressing
 - D. Indirect addressing

Question Type : MCQ
Question ID : 673502890
Status : Answered
Chosen Option : 1

Q.90 A consumer has five lamps of 40 W each and two fans of 300 W each. On an average, he uses the appliances for five hours a day. Find the energy consumption for the month of April.

- Ans
- A. 62 kWh
 - B. 124 kWh
 - C. 120 kWh
 - D. 60 kWh

Question Type : MCQ
Question ID : 673502851
Status : Answered
Chosen Option : 3

Section : Numerical and logical reasoning questions

Q.1 Which of the following is true for the equation $8x - 6 > 2x + 4$?

- Ans
- A. $x > \frac{3}{5}$
 - B. $x < \frac{5}{3}$
 - C. $x > \frac{5}{3}$
 - D. $x \geq \frac{5}{3}$

Question Type : MCQ
Question ID : 673502951
Status : Answered
Chosen Option : 4

Q.2 R, P and J are men and C, S and T are women. They are sitting in two different rows in such a way that the men are facing the women.

R and C are diagonally opposite to each other.

J is not sitting at any of the ends.

T is to the left of C.

Who is sitting opposite to J?

- Ans A. T
 B. P
 C. S
 D. C

Question Type : MCQ
Question ID : 673502935
Status : Answered
Chosen Option : 1

Q.3 Select the number from among the given options that can replace the question mark (?) in the following series.

4, 5, 12, 39, 160, ?

- Ans A. 640
 B. 805
 C. 292
 D. 350

Question Type : MCQ
Question ID : 673502942
Status : Answered
Chosen Option : 2

Q.4 Select the number from among the given options that can replace the question mark (?) in the following series.

6, 4, 10, 7, ?, 10, 30, 13

- Ans A. 18
 B. 9
 C. 16
 D. 17

Question Type : MCQ
Question ID : 673502944
Status : Not Answered
Chosen Option : --

Q.5 One morning, Lavanya and Cherry were talking to each other face to face at a crossing. If Cherry's shadow was exactly to the right of Lavanya, in which direction was Lavanya facing?

- Ans A. South
 B. West
 C. East
 D. North

Question Type : MCQ
Question ID : 673502938
Status : Not Answered
Chosen Option : --

Q.6 One morning, Rampyari walks 7 km toward south and then turns to her right. After walking 6 km, she turns to her left and walks 9 km. Then, she turns to her right and walks 2 km. In which direction is she now from her starting point?

- Ans A. South – West
 B. South
 C. North – West
 D. West

Question Type : MCQ

Question ID : 673502937

Status : Answered

Chosen Option : 2

Q.7 Select the option that is related to the third number in the same way as the second number is related to the first number.

429 : 555 :: 842 : ?

- Ans A. 962
 B. 1008
 C. 293
 D. 984

Question Type : MCQ

Question ID : 673502947

Status : Not Answered

Chosen Option : --

Q.8 Which of the following is true for the equation $6y - 8 \geq 7$?

- Ans A. $y \geq \frac{7}{2}$
 B. $y \geq \frac{5}{2}$
 C. $y \leq \frac{5}{2}$
 D. $y > 15$

Question Type : MCQ

Question ID : 673502950

Status : Answered

Chosen Option : 2

Q.9 Study the given pattern carefully and select the number that can replace the question mark (?) in it.

4	52	6
3	25	4
7	?	1

- Ans
- A. 8
 - B. 36
 - C. 50
 - D. 64

Question Type : MCQ
Question ID : 673502948
Status : Answered
Chosen Option : 3

Q.10 Read the given information carefully and answer the following question.

- 1) $A + B$ means A is the son of B.
- 2) $A \times B$ means A is the father of B.
- 3) $A - B$ means A is the sister of B.

Which of the following relations shows that Q is the grandfather of S?

- Ans
- A. $P + Q - R \times S$
 - B. $Q + P \times R \times S$
 - C. $Q - P \times R - S$
 - D. $P + Q \times R \times S$

Question Type : MCQ
Question ID : 673502934
Status : Not Answered
Chosen Option : --

Q.11 Study the given pattern carefully and select the number that can replace the question mark (?) in it.

6 27 15	4 15 9	7 ? 13
---------------	--------------	--------------

- Ans
- A. 22
 - B. 15
 - C. 18
 - D. 29

Question Type : MCQ
Question ID : 673502949
Status : Not Attempted and Marked For Review
Chosen Option : --

Q.12 Select the option that is related to the third number in the same way as the second number is related to the first number.

169 : 13 :: 361 : ?

- Ans
- A. 20
 - B. 18
 - C. 17
 - D. 19

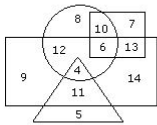
Question Type : MCQ

Question ID : 673502946

Status : Answered

Chosen Option : 4

Q.13 In the given diagram, the circle represents post-graduate doctors, the rectangle represents doctors who work in government hospitals, the square represents doctors who work in private hospitals and the triangle represents graduate doctors.



According to the diagram, identify the number showing doctors who are graduate, post-graduate and working in government hospitals but NOT working in private hospitals.

- Ans
- A. 6
 - B. 4
 - C. 11
 - D. 12

Question Type : MCQ

Question ID : 673502940

Status : Answered

Chosen Option : 2

Q.14 Select the number from among the given options that can replace the question mark (?) in the following series.

20, 22, 27, 38, 55, ?

- Ans
- A. 78
 - B. 74
 - C. 72
 - D. 76

Question Type : MCQ

Question ID : 673502943

Status : Answered

Chosen Option : 1

Q.15 Six friends are sitting in a circle and are facing the centre of the circle. Gagan is between Suraj and Tushar. Ratnesh is between Mukesh and Mayur. Suraj is to the left of Mukesh. Who is second to the right of Gagan?

- Ans
- A. Tushar
 - B. Mukesh
 - C. Mayur
 - D. Suraj

Question Type : MCQ
 Question ID : 673502936
 Status : Not Attempted and Marked For Review
 Chosen Option : --

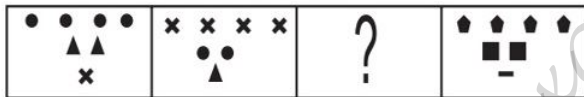
Q.16 Select the option that will fill in the blank and complete the given series.

132, 66, 66, _____, 198, 495

- Ans
- A. 88
 - B. 121
 - C. 99
 - D. 72

Question Type : MCQ
 Question ID : 673502952
 Status : Answered
 Chosen Option : 3

Q.17 Select the figure from the options that can replace the question mark (?) and complete the series.



(A) (B) (C) (D)

Ans

- A.
- B.
- C.
- D.

Question Type : MCQ
 Question ID : 673502939
 Status : Answered
 Chosen Option : 2

Q.18 Select the number from among the given options that can replace the question mark (?) in the following series.

12, 15, 19, 24, 30, ?

- Ans A. 36
 B. 37
 C. 38
 D. 35

Question Type : MCQ
Question ID : 673502941
Status : Answered
Chosen Option : 2

Q.19 Select the option that is related to the third number in the same way as the second number is related to the first number.

6 : 36 :: 12 : ?

- Ans A. 144
 B. 36
 C. 120
 D. 84

Question Type : MCQ
Question ID : 673502945
Status : Answered
Chosen Option : 1

Q.20 P is the sister of Q, R is the mother of Q, and S is the father of R. How is P related to S?

- Ans A. Daughter
 B. Grandmother
 C. Granddaughter
 D. Mother

Question Type : MCQ
Question ID : 673502933
Status : Answered
Chosen Option : 3

Section : Computer Application

Q.1 Microsoft Word is a:

- Ans A. compression software
 B. word processor
 C. graphics software
 D. language processor

Question Type : MCQ
Question ID : 673502962
Status : Answered
Chosen Option : 2

Q.2 Which of the following allows to connect hardware devices such as mouse and keyboard to your computer?

- Ans
- A. Power connector
 - B. USB port
 - C. AGP slot
 - D. Capacitor

Question Type : MCQ
Question ID : 673502955
Status : Answered
Chosen Option : 2

Q.3 Which of the following keyboard shortcuts is used to open the 'History' page in a new tab in Google Chrome?

- Ans
- A. Ctrl + T
 - B. Ctrl + H
 - C. Alt + H
 - D. Ctrl + Y

Question Type : MCQ
Question ID : 673502970
Status : Answered
Chosen Option : 2

Q.4 CPU, RAM, hard drive and ports for input and output devices in a computer system are all located on the _____.

- Ans
- A. ROM
 - B. motherboard
 - C. RAM
 - D. keyboard

Question Type : MCQ
Question ID : 673502953
Status : Answered
Chosen Option : 2

Q.5 Which of the following keyboard shortcuts can be used to Center Align paragraphs in an MS-Word 2016 document?

- Ans
- A. Ctrl + J
 - B. At + C
 - C. Ctrl + E
 - D. Ctrl + C

Question Type : MCQ
Question ID : 673502963
Status : Answered
Chosen Option : 3

Q.6 Which of the following is a non-impact printer?

- Ans A. Dot-matrix printer
 B. Inkjet printer
 C. Drum printer
 D. Daisy wheel printer

Question Type : MCQ
Question ID : 673502957
Status : Answered
Chosen Option : 2

Q.7 What is the length of an IPv4 address?

- Ans A. 24 bits
 B. 8 nibbles
 C. 8 bytes
 D. 16 bits

Question Type : MCQ
Question ID : 673502971
Status : Answered
Chosen Option : 4

Q.8 Which of the following key combinations can be used to start a slideshow in MS-PowerPoint 2016 from the current slide?

- Ans A. Ctrl + F4
 B. Ctrl + F5
 C. Shift + F4
 D. Shift + F5

Question Type : MCQ
Question ID : 673502966
Status : Not Answered
Chosen Option : --

Q.9 Which of the following statements is FALSE with regard to Windows?

- Ans A. In Windows systems, deleted items are temporarily stored in the Recycle Bin.
 B. Windows 10 does not support multitasking.
 C. After booting process of a Windows system, the first screen that appears is called Desktop.
 D. The bottom horizontal line of Desktop is called Taskbar.

Question Type : MCQ
Question ID : 673502959
Status : Answered
Chosen Option : 2

Q.10 Which of the following is an example of an application software?

- Ans A. WordPad
 B. Unix
 C. Linux
 D. Windows

Question Type : MCQ
Question ID : 673502958
Status : Answered
Chosen Option : 1

Q.11 Which of the following is NOT a web browser?

- Ans A. Safari
 B. Chrome
 C. Internet Explorer
 D. Baidu

Question Type : MCQ
Question ID : 673502968
Status : Answered
Chosen Option : 4

Q.12 Which of the following statements is/are true?

- (i) An MS-Word document may contain zero or more tables.
(ii) In an MS-Word document, paragraphs are created using the 'Enter' key.

- Ans A. Only (i)
 B. Both (i) and (ii)
 C. Neither (i) nor (ii)
 D. Only (ii)

Question Type : MCQ
Question ID : 673502967
Status : Answered
Chosen Option : 2

Q.13 What does the letter 'S' in HTTPS stand for?

- Ans A. Secure
 B. Seamless
 C. Service
 D. Synchronous

Question Type : MCQ
Question ID : 673502969
Status : Answered
Chosen Option : 3

Q.14 Which of the following hardware units directs operations within a computer's processor?

- Ans
- A. RAM
 - B. Input-Output port
 - C. Arithmetic and Logic Unit (ALU)
 - D. Control Unit (CU)

Question Type : MCQ
Question ID : 673502954
Status : Answered
Chosen Option : 3

Q.15 Which of the following is used to convert a file into a portable format?

- Ans
- A. Web browser
 - B. Acrobat Writer
 - C. WinZip software
 - D. Antivirus

Question Type : MCQ
Question ID : 673502960
Status : Answered
Chosen Option : 3

Q.16 In MS-Excel, cells can contain texts, numbers and dates. What is the default alignment of numbers in a cell?

- Ans
- A. Left
 - B. Justify
 - C. Center
 - D. Right

Question Type : MCQ
Question ID : 673502964
Status : Answered
Chosen Option : 1

Q.17 Which of the following statements is/are FALSE?

- (i) Windows operating systems support GUI.
- (ii) Unix is a multiuser operating system.

- Ans
- A. Neither (i) nor (ii)
 - B. Both (i) and (ii)
 - C. Only (i)
 - D. Only (ii)

Question Type : MCQ
Question ID : 673502961
Status : Answered
Chosen Option : 2

Q.18 Which of the following is NOT an output device?

- Ans
- A. Printer
 - B. VDU
 - C. Microphone
 - D. Plotter

Question Type : MCQ
Question ID : 673502956
Status : Answered
Chosen Option : 3

Q.19 Which of the following protocols is used for file transfer between computers connected to the Internet?

- Ans
- A. SMTP
 - B. FTP
 - C. HTTP
 - D. TELNET

Question Type : MCQ
Question ID : 673502972
Status : Answered
Chosen Option : 2

Q.20 Which of the following is NOT a valid absolute cell address in MS-Excel?

- Ans
- A. \$ABS\$1
 - B. \$AA\$5
 - C. \$A5\$
 - D. \$AZ\$10

Question Type : MCQ
Question ID : 673502965
Status : Not Answered
Chosen Option : --

Section : GK Awareness

Q.1 Which Indian state shares international borders with four countries – Bhutan in the west, Myanmar in the east and Tibet and China in the north?

- Ans
- A. Arunachal Pradesh
 - B. Mizoram
 - C. Jharkhand
 - D. Odisha

Question Type : MCQ
Question ID : 673502973
Status : Answered
Chosen Option : 1

Q.2 Which of the following Acts was passed by the British Parliament to control the territories of the East India Company majorly in Bengal?

- Ans
- A. Pitt's India Act 1784
 - B. Government of India Act 1919
 - C. Regulating Act of 1773
 - D. The Act of 1858

Question Type : MCQ
Question ID : 673502974
Status : Answered
Chosen Option : 2

Q.3 When did the Indian government issue an order called the 'Office Memorandum' that would provide 27% reservation to 'socially and educationally backward classes' for jobs in central services and public undertaking?

- Ans
- A. 2 October 1990
 - B. 13 August 1990
 - C. 1 January 1990
 - D. 15 November 1990

Question Type : MCQ
Question ID : 673502977
Status : Not Answered
Chosen Option : --

Q.4 Which country hosted the World Wrestling Championship in 1967?

- Ans
- A. Turkey
 - B. India
 - C. Japan
 - D. United states

Question Type : MCQ
Question ID : 673502976
Status : Answered
Chosen Option : 2

Q.5 Who won the Australian Open 2021 men's title?

- Ans
- A. Daniil Medvedev
 - B. Novak Djokovic
 - C. Rafael Nadal
 - D. Stefanos Tsitsipas

Question Type : MCQ
Question ID : 673502980
Status : Answered
Chosen Option : 2

Q.6 Which of the following is a popular bull taming sport held during Pongal in Tamil Nadu?

- Ans A. Chitri Rai festival
 B. Jallikattu
 C. Natyanjali
 D. Mahamaham

Question Type : MCQ
Question ID : 673502978
Status : Answered
Chosen Option : 2

Q.7 Origami, the art of paper folding, is famous in:

- Ans A. Japan
 B. The US
 C. Malaysia
 D. Canada

Question Type : MCQ
Question ID : 673502979
Status : Not Answered
Chosen Option : --

Q.8 In which year was the Basketball Federation of India set up?

- Ans A. 1948
 B. 1950
 C. 1949
 D. 1953

Question Type : MCQ
Question ID : 673502975
Status : Not Answered
Chosen Option : --

Q.9 Which Bollywood actor helped thousands of migrant workers, stranded by the Covid-19 lockdown in Mumbai, return home?

- Ans A. Abhishek Bachhan
 B. Sonu Sood
 C. Bobby Deol
 D. Ayusman Khurana

Question Type : MCQ
Question ID : 673502981
Status : Answered
Chosen Option : 2

Q.10 The Noble peace prize 2020 was awarded to:

- Ans**
- A. Global Green Growth Institute
 - B. World Health Organization
 - C. World Bank
 - D. World Food Program

Question Type : **MCQ**

Question ID : **673502982**

Status : **Answered**

Chosen Option : **2**