

Electrical Engineering Job Interview Questions And Answers



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Electrical Engineering Interview Questions And Answers Guide.

Question - 1:

In a star connected three phase transformer the

Ans:

- * a) Three phases are connected together at the start point
- * b) Three phases are separate
- * c) Neutral conductor is connected to a single phase
- * d) Neutral conductor is electrically separated

Answer - a

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Question - 2:

A single-phase double-wound transformer consists of

Ans:

- * a) A single core mounted winding
- * b) A winding that carries the difference between IP and IS
- * c) A single solid core
- * d) Two electrically separated coils

Answer - d

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Question - 3:

One method of insulating windings is to use

Ans:

- * a) Shelac
- * b) High reluctance silicon steel
- * c) Low frequency dust cores
- * d) PVC

Answer - a

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Question - 4:

The usual method of insulating core laminations is

Ans:

- * a) Low reluctance silicon steel
- * b) Surface oxidization
- * c) High frequency air cores
- * d) Cellulose paper

Answer - b

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Question - 5:

If a motor is required to start against a large starting current, it is usual to use

Ans:

- * a) Direct on line starter
- * b) Face plate starter
- * c) Step down centre tapped starter
- * d) Rotor resistance starter



Answer - d

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Question - 6:

In a shunt-wound motor the field coil is connected in

Ans:

- * a) Series with the armature
- * b) Series with the motor
- * c) parallel with the armature
- * d) parallel with the motor

Answer - c

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Question - 7:

When the field windings of an electrical machine are not connected to its own armature, it is known as

Ans:

- * a) Self- excited
- * b) Polyphase
- * c) Separately-excited
- * d) Synchronous

Answer - c

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Question - 8:

With a star-delta starter, the windings are brought out to a terminal box. The voltage applied to the windings at starting is

Ans:

- * a) $V_L \div \sqrt{3}$
- * b) $V_L \times \sqrt{3}$
- * c) $V_{Phase} \div \sqrt{3}$
- * d) $V_{Phase} \times \sqrt{3}$

Answer - a

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Question - 9:

Particular starting arrangements are used when a motor has a rating greater than

Ans:

- * a) 370 microwatts
- * b) 0.37 watts
- * c) 37 watts
- * d) 370 watts

Answer - d

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Question - 10:

An isolator built into a panel is used for

Ans:

- * a) Normal load switching
- * b) Fault load switching
- * c) Short circuit protection
- * d) No load switching

Answer - d

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Question - 11:

A device with a BS EN number has been

Ans:

- * a) Agreed for use only within the UK
- * b) Agreed for operational use within the EU
- * c) Standardized for all operational uses only in the UK
- * d) Standardized for use in the EU

Answer - d

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Question - 12:

Q8 BS 7671 provides appropriate advice on

Ans:



- * a) Heights of panels
- * b) Design of panels
- * c) Environmental conditions
- * d) Instrumentation

Answer - c

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Question - 13:

What degree of protection is specified for protection against a BS finger?

Ans:

- * a) IP4XB
- * b) IP5XB
- * c) IP6XB
- * d) IPXXB

Answer - d

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Question - 14:

Which of the following is statutory?

Ans:

- * a) BS 7671
- * b) On-Site Guide
- * c) Electricity at Work Regulations
- * d) GS 38

Answer - c

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Question - 15:

Which of the following are appropriate tests for a completed panel?

Ans:

- * a) Flash testing of components
- * b) Insulation resistance and polarity
- * c) Inspection of conductors for current carrying capacity
- * d) Identification of conductors

Answer - b

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Question - 16:

The purpose of a switch is to open or close a circuit

Ans:

- * a) In the event of a fault current
- * b) Under load conditions
- * c) Under overload conditions
- * d) Automatically after a fault has been repaired

Answer - b

[View All Answers](#)

Question - 17:

A common type of cable termination used for ribbon cables in panel building is

Ans:

- * a) Pin
- * b) Lug
- * c) Insulation displacement
- * d) Screw

Answer - c

[View All Answers](#)

Question - 18:

A moving coil meter is not used on an ac circuit because

Ans:

- * a) It cannot read very small variations
- * b) The direction of the deflection depends upon the direction of the current
- * c) It is non linear
- * d) It does not use the damping effect

Answer - b

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Question - 19:



To ensure safe isolation, voltage indicating devices

Ans:

- * a) Must comply with BS 7671
- * b) Are used to prove the circuit dead only
- * c) Are used to prove the circuit was alive only
- * d) Must be "proved" prior to and "re-proved" after isolation

Answer - d

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Question - 20:

Which of the following is not a factor, which would affect the type of termination?

Ans:

- * a) Circuit design current
- * b) Physical space around terminations
- * c) Presence of solid foreign bodies
- * d) Size of conductor

Answer - c

[View All Answers](#)

Question - 21:

Which of the following has an adverse effect on installed equipment?

Ans:

- * a) Eddy current damping
- * b) Air damping
- * c) Ambient temperature
- * d) Operating temperature

Answer - c

[View All Answers](#)

Question - 22:

The purpose of a visual inspection is to ensure compliance with BS 7671, Section

Ans:

- * a) 601
- * b) 712
- * c) 413
- * d) 314

Answer - b

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Question - 23:

The purpose of a method statement is to

Ans:

- * a) Ensure compliance with BS 7671
- * b) Identify a safe working practice
- * c) Provide a training document for staff
- * d) Provide instructions to be followed at all times

Answer - b

[View All Answers](#)

Question - 24:

Electrostatic sensitive equipment, in transit, need not be protected against damage from

Ans:

- * a) High temperature
- * b) Dust and fibers
- * c) Moisture ingress
- * d) Day light

Answer - d

[View All Answers](#)

Question - 25:

To facilitate ease of installation and assembly of equipment reference is made to

Ans:

- * a) BS 7430
- * b) Manufacturer's catalogues
- * c) GS 38
- * d) Data charts

Answer - d



[View All Answers](#)

Question - 26:

When a voltmeter is connected in a circuit it is essential that it

Ans:

- * a) Has a very low resistance
- * b) Has a very high resistance
- * c) Is connected in series with the supply
- * d) Is connected in series with the load

Answer - b

[View All Answers](#)

Question - 27:

When an ammeter is connected in a circuit it is essential that it

Ans:

- * a) Has a very low resistance
- * b) Has a very high resistance
- * c) Is connected across the supply
- * d) Is connected across the load

Answer - a

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Question - 28:

Which of the following has an impact upon earthing?

Ans:

- * a) BS EN 60439-01
- * b) BS 4491
- * c) BS 4444
- * d) BS EN 60898

Answer - c

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Question - 29:

Which of the following is a statutory piece of legislation?

Ans:

- * a) BS 7671
- * b) IEE Guidance Notes
- * c) Electricity at Work Regulations
- * d) IEE On-Site Guide

Answer - c

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Question - 30:

Which of the following lamps would not normally form part of a highway electrical system?

Ans:

- * a) Low pressure mercury (T8-T12)
- * b) Low pressure mercury (MBF)
- * c) Metal halide (MBI)
- * d) Incandescent Lamp (100W)

Answer - d

[View All Answers](#)

Question - 31:

Which legislation states the need to avoid live working unless unreasonable in all circumstances?

Ans:

- * a) BS 7671
- * b) Guidance Notes 3
- * c) On-Site Guide
- * d) The Electricity at Work Regulations

Answer - d

[View All Answers](#)

Question - 32:

To facilitate safe isolation, voltage indicating devices

Ans:

- * a) Must comply with BS 7671



- * b) Are used to prove the circuit was dead only
- * c) Are used to prove the circuit was alive only
- * d) Are "proved" prior to and "re-proved" after isolation

Answer - d

[View All Answers](#)

Question - 33:

Instruments should be regularly calibrated to

Ans:

- * a) Support local industry
- * b) Ensure accuracy when testing
- * c) Ensure operative is up to date
- * d) Provide a training exercise for operatives

Answer - b

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Question - 34:

Relevant information for re commissioning street furniture can be found in

Ans:

- * a) IEE Guidance Notes 7
- * b) Works instructions
- * c) The Electricity Supply Regulations
- * d) The Petroleum (Consolidation) Act 1928

Answer - b

[View All Answers](#)

Question - 35:

Voltage indication devices need to be proved to ensure

Ans:

- * a) That the lamp has not gone
- * b) That the highway furniture has been installed correctly
- * c) Safe working conditions
- * d) The correct operation of street furniture

Answer - c

[View All Answers](#)

Question - 36:

It is necessary to avoid skin contact with quartz lamps, as it

Ans:

- * a) Reduces the life of the lamp
- * b) Could cause burns
- * c) Generates excessive heat
- * d) Lengthens lampworking life

Answer - a

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Question - 37:

Which of the following is a statutory document applicable to operatives carrying out installation and maintenance of highway electrical equipment?

Ans:

- * a) The Laying of Cables in Public Highways
- * b) H.S.E guidance H.S.G 47 (Avoiding danger from underground and overhead services)
- * c) The Personal Protective Equipment at Work Regulations
- * d) Electricity Association G39/1

Answer - c

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Question - 38:

Which of the following is a non-statutory document?

Ans:

- * a) The New Roads and Street Works Act
- * b) The Electricity Safety, Quality, and Continuity Regulations 2002
- * c) BS 7671
- * d) The Electrical Equipment (Safety) Regulations

Answer - c

[View All Answers](#)

Question - 39:



Which of the following normally form part of a highway electrical system?

Ans:

- * a) Current transformers and photoelectrical control units
- * b) Voltage transformers and RCD's
- * c) Igniters and transformers
- * d) Power factor meter and isolators

Answer - c

[View All Answers](#)

Question - 40:

Low-pressure mercury- vapor lamps should be disposed of by

Ans:

- * a) Throwing in a skip
- * b) Putting in a glass recycle point (clear glass only)
- * c) Using a suitable lamp crusher
- * d) Putting in the refuse bins, which are collected weekly?

Answer - c

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Question - 41:

When carrying out maintenance work on a distribution board in a busy walkway, it is advisable to protect others by the use of a

Ans:

- * a) Warning sign
- * b) Safety barrier
- * c) Temporary bollard
- * d) Audible warning device

Answer - b

[View All Answers](#)

Question - 42:

In order to understand the operating procedure for a particular item of equipment, the best source of information would be the

Ans:

- * a) Company sales representative
- * b) Manufacturers' manual
- * c) Manufacturers' catalogue
- * d) Circuit diagram

Answer - b

[View All Answers](#)

Question - 43:

Guidance on regular inspection and testing of portable appliances can be found in

Ans:

- * a) BS 7671 Requirements for Electrical Installation
- * b) IEE Guidance Note 3 Inspection and testing
- * c) IEE Code of Practice for In-Service Inspection and Testing of Electrical Equipment
- * d) IEE on Site Guide

Answer - c

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Question - 44:

Certain discharge luminaries mounted above rotating machine can give the appearance that the machine is at a standstill. This effect is known as

Ans:

- * a) Stroboscopic effect
- * b) Robotic effect
- * c) Rotor effect
- * d) Telescopic effect

Answer - a

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Question - 45:

Once a low-pressure mercury vapour lamp has lit, the purpose of the choke/ballast unit is to

Ans:

- * a) Discharge voltage
- * b) Correct power factor
- * c) Suppress radio interference
- * d) Limit lamp current

Answer - d



[View All Answers](#)

Question - 46:

Balancing loads over three phases will reduce

Ans:

- * a) Phase currents
- * b) Earth faults
- * c) Neutral currents
- * d) Overloads

Answer - c

[View All Answers](#)

Question - 47:

In order to facilitate maintenance of a complex electrical system, the sequence of control for isolation can be best shown using a

Ans:

- * a) Block diagram
- * b) Layout drawing
- * c) Circuit diagram
- * d) Bar chart

Answer - a

[View All Answers](#)

Question - 48:

In order to prevent danger during maintenance operations, a voltage warning notice is required on all electrical accessories where

Ans:

- * a) Voltage is present
- * b) The voltage exceeds 230V and such voltage would not be expected
- * c) The voltage exceeds 400V
- * d) The voltage is below 230V

Answer - b

[View All Answers](#)

Question - 49:

The Electricity at Work Regulations state that electrical equipment must be maintained to prevent danger. Electrical equipment is defined as all small items of battery-powered equipment up to and including overhead power lines rated at

Ans:

- * a) 230V
- * b) 400V
- * c) 33kV
- * d) 400kV

Answer - d

[View All Answers](#)

Question - 50:

The four electrical tests that should be carried out on a new ring final circuit before it is energized are

Ans:

- * a) Continuity of protective conductors, continuity of ring final circuits, insulation, - resistance and polarity
- * b) Continuity of ring final circuits, insulation resistance, polarity, and earth fault loop - impedance
- * c) Insulation resistance, polarity, earth fault loop impedance and continuity of protective - conductors
- * d) Polarity, earth fault loop-impedance, continuity of protective conductors and Continuity of ring final circuits

Answer - a

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Question - 51:

A 50 mm x 50 mm steel trunking has a tabulated space factor of 1037. If the tabulated factor for PVC cable having a cross sectional area of 6 mm² is 21.2, the maximum number of these cables that can be installed into the trunking is

Ans:

- * a) 47
- * b) 48
- * c) 49
- * d) 50

Answer - b

[View All Answers](#)

Question - 52:

The most suitable item of equipment to mark a straight line in order to install a horizontal conduit over a distance of 4 m is a

Ans:



- * a) Plumb line
- * b) Spirit level
- * c) Steel tape
- * d) Chalk line

Answer - d

[View All Answers](#)

Question - 53:

A residual current device will disconnect under

Ans:

- * a) short circuit conditions only
- * b) Both earth fault and short circuit conditions
- * c) Earth fault conditions only
- * d) Overload conditions only

Answer - c

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Question - 54:

An earthing arrangement that has a PEN conductor is

Ans:

- * a) TN-C-S
- * b) TN-S
- * c) TT
- * d) IT

Answer - a

[View All Answers](#)

Question - 55:

A non-maintained emergency light is classified as NM3. This means that the luminary will illuminate during

Ans:

- * a) Normal conditions then automatically switch off after three hours
- * b) Any power failure for up to three hours
- * c) Both normal and power failure conditions then automatically switch off after three hours
- * d) Power failures that last longer than three hours but not shorter than three hours

Answer - b

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Question - 56:

A circuit wired in 1.5 mm² thermoplastic (PVC) twin with CPC cable is protected by a 16 A device and is used to supply a 230 V 3 kW water heater. If the cable has a rated voltage drop of 29 mV/A/m and the circuit is 24 m long, the actual voltage drop will be

Ans:

- * a) 2.08V
- * b) 9.07V
- * c) 11.14V
- * d) 69V

Answer - b

[View All Answers](#)

Question - 57:

The maximum operating temperature for a thermoplastic (pace) insulated cable with copper conductors is

Ans:

- * a) 60 OC
- * b) 70 OC
- * c) 105 OC
- * d) 160 OC

Answer - b

[View All Answers](#)

Question - 58:

For a drawing having a scale of 1:50, a wall 10 m long would be drawn to a length of

Ans:

- * a) 10 mm
- * b) 20 cm
- * c) 50 cm
- * d) 10050 mm

Answer - b

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**Question - 59:**

Which of the following is a non-statutory regulation?

Ans:

- * a) Electricity at Work Regulations
- * b) Health and Safety at Work Act
- * c) Electricity Safety, Quality, and Continuity Regulations
- * d) BS 7671- Requirements for Electrical Installations

Answer - d

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Question - 60:

If a circuit protective device requires 200 A in order to disconnect in the required time, the overall impedance of the earth fault path for a 230 V circuit protected by the device must not exceed

Ans:

- * a) 0.86 Ω
- * b) 1.15 Ω
- * c) 2.15 Ω
- * d) 2.30 Ω

Answer - b

[View All Answers](#)

Question - 61:

Which of the following is a transmission voltage?

Ans:

- * a) 400 kV
- * b) 33 kV
- * c) 400 V
- * d) 230 V

Answer - a

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Question - 62:

The ratio of the true power to apparent power in an ac circuit is the

Ans:

- * a) Power consumption
- * b) Harmonic current
- * c) Power factor
- * d) Reactive power

Answer - c

[View All Answers](#)

Question - 63:

In order to determine the amount of accessories required for a particular contract, the best method would be to use the layout drawings and a

Ans:

- * a) Site diary
- * b) Take off sheet
- * c) Day work sheet
- * d) Time sheet

Answer - b

[View All Answers](#)

Question - 64:

In order to prove safe isolation of an electrical circuit, it is essential to use

Ans:

- * a) A multi-meter
- * b) An insulation resistance tester
- * c) An approved voltage indicator
- * d) A low reading ohmmeter

Answer - c

[View All Answers](#)

Question - 65:

A suitable means of recording the number of visitors on a large construction site is by the use of a

Ans:

- * a) Day work sheet
- * b) Timesheet
- * c) Take off sheet



* d) Visitors book

Answer - d

[View All Answers](#)

Question - 66:

On a large construction site, inductions are carried out for new members of staff in order to inform them of the

Ans:

- * a) Location of the canteen
- * b) Requirements within BS 7671
- * c) Fire safety procedure
- * d) Location of the nearest wholesaler

Answer - d

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Question - 67:

Before any work is done within an electrical installation, the first procedure would be to

Ans:

- * a) Carry out a risk assessment
- * b) Turn off the main switch
- * c) Remove all components
- * d) Install temporary supplies

Answer - c

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Question - 68:

The order in which they should be carried out is

Ans:

- * a) 1, 3, 2, 4, 5
- * b) 1, 2, 3, 4, 5
- * c) 2, 1, 4, 3, 5
- * d) 2, 3, 1, 4, 5

Answer - a

[View All Answers](#)

Question - 69:

The five main stages of the risk assessment procedure are:

Ans:

- * a) Identify
- * b) Evaluate
- * c) Record
- * d) Implement
- * e) Review

Answer - b

[View All Answers](#)

Question - 70:

A particular extension lead used on a construction site is colored yellow to

Ans:

- * a) Indicate its mechanical stress properties
- * b) Enable it to be seen in the dark
- * c) Indicate the supply voltage to it
- * d) Enable it to be identified as suitable for site use

Answer - c

[View All Answers](#)

Question - 71:

A 110 V, centre-tapped earth, reduced low voltage supply for power tools provides a voltage of

Ans:

- * a) 25 V between live conductors
- * b) 55 V to earth
- * c) 110 V to earth
- * d) 12 V SELV

Answer - b

[View All Answers](#)

Question - 72:

The purpose of a bonding conductor is to provide



Ans:

- * a) An earth fault path
- * b) An equal potential zone
- * c) Short circuit protection
- * d) Overload protection

Answer - b

[View All Answers](#)

Question - 73:

The white or grey PVC outer layer of a twin and CPC flat thermoplastic (PVC) cable is the

Ans:

- * a) conductor
- * b) Insulation
- * c) Conductor
- * d) Sheath

Answer - d

[View All Answers](#)

Question - 74:

A mass of 20 kg is to be raised by a hoist 2 m in 30 seconds. Assuming no losses, the power required to raise this load is

Ans:

- * a) 13.08 Watts
- * b) 196.2 Watts
- * c) 392.4 Watts
- * d) 1200 Watts

Answer - a

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Question - 75:

Where $P = V I$. The value V can be determined using

Ans:

- * a) $V = \frac{I}{P}$
- * b) $V = \frac{P}{I}$
- * c) $V = P - I$
- * d) $V = \frac{P}{I}$

Answer - d

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Question - 76:

Four resistors having values of 2 Ω , 2 Ω , 5 Ω , and 20 Ω are connected in a parallel circuit arrangement. The total resistance of this circuit is

Ans:

- * a) 0.8 Ω
- * b) 1.25 Ω
- * c) 29 Ω
- * d) 400 Ω

Answer - a

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Question - 77:

An increase in current through a conductor will lead to

Ans:

- * a) A decrease in conductor temperature
- * b) A decrease in conductor resistance
- * c) An increase in insulation resistance
- * d) An increase in conductor temperature

Answer - d

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Question - 78:

A single rotation of an alternator, intended to provide a 50 Hz supply frequency, will take

Ans:

- * a) 2 ms
- * b) 20 ms
- * c) 50 ms
- * d) 5000 ms

Answer - b

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**Question - 79:**

The Tesla is the unit of

Ans:

- * a) Magnetic flux
- * b) Molecular flux
- * c) Magnetic flux density
- * d) Molecular flux density

Answer - c

[View All Answers](#)

Question - 80:

Using a scale of 1:50, a 10 mm measurement taken from a plan would be equal to an actual measurement of

Ans:

- * a) 5 mm
- * b) 5 cm
- * c) 0.5 m
- * d) 5 m

Answer - c

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Question - 81:

To ensure that a particular item of electro technical equipment meets a particular British Standard or BSEN Harmonized Standard, the best source of information would be the

Ans:

- * a) manufacturer of the equipment
- * b) British Standards Institute
- * c) Institute of Electrical Engineers
- * d) Supplier of the equipment

Answer - a

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Question - 82:

An independent regulatory body responsible for monitoring standards of electrical installation contractors is the

Ans:

- * a) Electrical Institute Council
- * b) Institute of Electrical Engineers
- * c) National Electrical Contractors Institute Inspection Council
- * d) National Inspection Council for Electrical Installation Contractors

Answer - d

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Question - 83:

CO2 fire extinguishers are indicated by the color code

Ans:

- * a) Black
- * b) Red
- * c) Beige
- * d) Blue

Answer - a

[View All Answers](#)

Question - 84:

The type of fire extinguisher, which would not be suitable for flammable liquids, is

Ans:

- * a) Dry powder
- * b) Water
- * c) Carbon dioxide
- * d) Foam

Answer - b

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Question - 85:

First aid points are indicated using signs bearing a white cross on a

Ans:

- * a) Yellow background
- * b) Blue background
- * c) Red background



* d) Green background

Answer - d

[View All Answers](#)

Question - 86:

When carrying out repairs to the base of a street lighting column it is essential to wear

Ans:

- * a) A safety harness
- * b) High visibility clothes
- * c) Gauntlets
- * d) High voltage clothing

Answer - b

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Question - 87:

Prior to using an electric saw on a construction site, a user check finds that the insulation on the supply flex is damaged. The correct procedure would be to

Ans:

- * a) Replace the cord with a new one
- * b) Report the damage to a supervisor after use
- * c) Repair the cord with insulation tape
- * d) Report the damage to a supervisor before use

Answer - d

[View All Answers](#)

Question - 88:

Which of the following documents is non-statutory?

Ans:

- * a) Health and Safety at Work Act
- * b) Electricity at Work Regulations
- * c) COSHH
- * d) BS 7671- Requirements for Electrical Installations

Answer - d

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Question - 89:

Draw the state diagram for a circuit that outputs?

Ans:

Draw the state diagram for a circuit that outputs a "1" if the aggregate serial binary input is divisible by 5. For instance, if the input stream is 1, 0, 1, we output a "1" (since 101 is 5). If we then get a "0", the aggregate total is 10, so we output another "1" (and so on). We don't need to keep track of the entire string of numbers - if something is divisible by 5, it doesn't matter if it's 250 or 0, so we can just reset to 0. So we really only need to keep track of "0" through "4".

[View All Answers](#)

Question - 90:

Design a four-input NAND gate using only two-input NAND gates

Ans:

Basically, you can tie the inputs of a NAND gate together to get an inverter, so...

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Question - 91:

Explain the differences between "Direct Mapped", "Fully Associative", and "Set Associative" caches

Ans:

If each block has only one place it can appear in the cache, the cache is said to be direct mapped. The mapping is usually (block-frame address) modulo (number of blocks in cache).

If a block can be placed anywhere in the cache, the cache is said to be fully associative.

If a block can be placed in a restricted set of places in the cache, the cache is said to be set associative. A set is a group of two or more blocks in the cache. A block is first mapped onto a set, and then the block can be placed anywhere within the set. The set is usually chosen by bit selection; that is, (block-frame address) modulo (number of sets in cache). If there are n blocks in a set, the cache placement is called n-way set associative.

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Question - 92:

Given the following FIFO and rules, how deep does the FIFO need to be to prevent underflowing or overflowing?

Ans:

Given the following FIFO and rules, how deep does the FIFO need to be to prevent underflowing or overflowing?

RULES:

1) $\text{frequency}(\text{clk_A}) = \text{frequency}(\text{clk_B}) / 4$



2) $\text{period}(\text{en_B}) = \text{period}(\text{clk_A}) * 100$

3) $\text{duty_cycle}(\text{en_B}) = 25\%$

Assume $\text{clk_B} = 100\text{MHz}$ (10ns)

From (1), $\text{clk_A} = 25\text{MHz}$ (40ns)

From (2), $\text{period}(\text{en_B}) = 40\text{ns} * 400 = 4000\text{ns}$, but we only output for 1000ns, due to (3), so 3000ns of the enable we are doing no output work. Therefore, $\text{FIFO size} = 3000\text{ns}/40\text{ns} = 75$ entries.

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Question - 93:

Write a function to output a diamond shape according to the given (odd) input?

Ans:

Examples: Input is 5 Input is 7

<pre>

```

    *           *
   ***         ***
  *****     *****
 ***          *****
 *            *****
           ***
          *
```

</pre>

BEGIN PERL SNIPET

for (\$i = 1; \$i <= ((\$input * 2) - 1); \$i += 2) {

if (\$i <= \$input) {

\$stars = \$i;

\$spaces = (\$input - \$stars) / 2;

while (\$spaces-- > 0) { print " "; }

while (\$stars-- > 0) { print "*"; }

} else {

\$spaces = (\$i - \$input) / 2;

\$stars = \$input - (\$spaces * 2);

while (\$spaces-- > 0) { print " "; }

while (\$stars-- > 0) { print "*"; }

}

print "\n";

}

END PERL SNIPET

[View All Answers](#)

Question - 94:

Write a function to determine whether a string is a palindrome (same forward as reverse, such as "radar" or "mom")

Ans:

/* BEGIN C SNIPET */

#include

void is_palindrome (char *in_str) {

char *tmp_str;

int i, length;

length = strlen (*in_str);

for (i = 0; i < length; i++) {

*tmp_str[length-i-1] = *in_str[i];

}

if (0 == strcmp (*tmp_str, *in_str)) printf ("String is a palindrome");

else printf ("String is not a palindrome");

}

/* END C SNIPET */

[View All Answers](#)

Question - 95:

In C, explain the difference between the & operator and the * operator?

Ans:

& is the address operator, and it creates pointer values.

* is the indirection operator, and it preferences pointers to access the object pointed to.

Example:

In the following example, the pointer ip is assigned the address of variable i (&i). After that assignment, the expression *ip refers to the same object denoted by i:

```
int i, j, *ip;
```

```
ip = &i;
```

```
i = 22;
```

```
j = *ip; /* j now has the value 22 */
```

```
*ip = 17; /* i now has the value 17 */
```

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Question - 96:

Write the code for finding the factorial of a passed integer. Use a recursive subroutine?

Ans:



```
// BEGIN PERL SNIPET
sub factorial {
my $y = shift;
if ( $y > 1 ) {
return $y * &factorial( $y - 1 );
} else {
return 1;
}
}
// END PERL SNIPET
```

[View All Answers](#)

Question - 97:

Write the code to sort an array of integers?

Ans:

```
/* BEGIN C SNIPET */
void bubblesort (int x[], int lim) {
int i, j, temp;
for (i = 0; i < lim; i++) {
for (j = 0; j < lim-1-i; j++) {
if (x[j] > x[j+1]) {
temp = x[j];
x[j] = x[j+1];
x[j+1] = temp;
} /* end if */
} /* end for j */
} /* end for i */
} /* end bubblesort */
/* END C SNIPET */
```

Some optimizations that can be made are that a single-element array does not need to be sorted; therefore, the "for i" loop only needs to go from 0 to lim-1. Next, if at some point during the iterations, we go through the entire array WITHOUT performing a swap, the complete array has been sorted, and we do not need to continue. We can watch for this by adding a variable to keep track of whether we have performed a swap on this iteration.

[View All Answers](#)

Question - 98:

What is the difference between running the following snippet of code on Verilog vs Vera?

Ans:

What is the difference between running the following snippet of code on Verilog vs Vera?

```
fork {
task_one();
#10;
task_one();
}
task task_one() {
cnt = 0;
for (i = 0; i < 50; i++) {
cnt++;
}
}
```

[View All Answers](#)

Question - 99:

Using the given, draw the waveforms for the following versions of a?

Ans:

Using the given, draw the waveforms for the following versions of a (each version is separate, i.e. not in the same run):

```
reg clk;
reg a;
always #10 clk = ~clk;
(1) always @(clk) a = #5 clk;
(2) always @(clk) a = #10 clk;
(3) always @(clk) a = #15 clk;
Now, change a to wire, and draw for:
(4) assign #5 a = clk;
(5) assign #10 a = clk;
(6) assign #15 a = clk;
```

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Question - 100:

What is the difference between:

```
c = foo ? a : b;
and
if (foo) c = a;
else c = b;
```

Ans:

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