

**Advanced Competence Assessment (ACA)
Mock Questions**



BS 7671 Questions

Question 1

Arc fault detection devices (AFDD) conforming to BS EN 62606 are recommended protection against fire caused by arc faults or faulty electrical equipment/circuit for:

- a) Single phase DC final circuits supplying socket-outlets exceeding 32 A
- b) Single phase AC final circuits supplying socket-outlets exceeding 32 A
- c) Single phase AC final circuits supplying socket-outlets not exceeding 32 A
- d) Three phase AC final circuits supplying socket-outlets not exceeding 32 A

Question 2

A final circuit supplying a 2 kW boiling water tap is wired using 2.5mm² PVC insulated copper conductors with a 1.5mm² circuit protective conductor, and is 15 m long. The installation has a Ze of 0.65 ohms. Taking in to account the maximum permissible operating temperature of 70° C with a correction value of 1.2. What will be the value of the measured Zs for this circuit?

- a) 0.87 Ω
- b) 0.91 Ω
- c) 0.94 Ω
- d) 1.16 Ω

Question 3

What is the maximum operating temperature of a cable with thermoplastic insulation?

- a) 180° C
- b) 60° C
- c) 90° C
- d) 70° C

Question 4

What is the maximum value of Zs to satisfy requirements in BS 7671 for a 230 V circuit connected to a TT earthing system that is protected by a 500 mA RCD:

- a) 167 Ω
- b) 100 Ω
- c) 200 Ω
- d) 1667 Ω

Question 5

An earth fault loop impedance test carried out at the end of a final circuit determines:

- a) Z_s
- b) Z_e
- c) R_1
- d) R_2

Question 6

A protective conductor connecting the main earth terminal of an installation to an earth electrode or to other means of main earthing is the definition of:

- a) A main bonding conductor
- b) An earth continuity conductor
- c) An earthing conductor
- d) A circuit protective conductor

Question 7

Which one of the following regulations are non-statutory?

- a) BS 7671 IET Wiring Regulations
- b) Electricity Supply Regulations 1988
- c) Electricity at Work Regulations 1989
- d) Agricultural (Stationary Machinery) Regulations 1959

Question 8

Which one of the following CANNOT be used as an earth electrode?

- a) A metal water supply pipe
- b) An earth tape
- c) The lead sheath covering of cable
- d) Welded steel reinforcement within concrete

Question 9

All equipment installed in a room containing a sauna heater shall have a degree of protection of at least:

- a) IP4X
- b) IP2X
- c) IPX4
- d) IPX2

Question 10

In Part 5 of BS 7671:2018+A2:2022 which section provides requirements for isolation and switching?

- a) Section 537
- b) Section 534
- c) Section 543
- d) Section 559

Inspection & Testing Questions

Question 11

When completing an Electrical Installation Condition Report which classification code would be allocated to an observation to indicate that an **improvement is recommended**.

- a) C1
- b) C2
- c) C3
- d) Fi

Question 12

What is the purpose of periodic inspection and testing?

- a) To confirm that all contractual agreements have been followed
- b) To confirm that the installation is safe before being put into service
- c) To confirm that equipment guarantees are still valid
- d) To confirm the installation is in a satisfactory condition for continued service

Question 13

While carrying out periodic inspection and testing of an existing installation, you have found that the connection of a bonding clamp to the water service pipe is loose.

What classification code is recommended in best practice guide 4 to be recorded against this observation?

- a) C3
- b) C2
- c) C1
- d) FI

Question 14

What are the rated voltages of test probes that GS 38 applies to?

- a) Extra low voltage only.
- b) High voltage
- c) Low voltage only
- d) Extra low voltage and Low voltage

Question 15

From GN3, what is the suggested maximum initial period between inspection and testing for an Agricultural and horticultural installation?

- a) 3 years
- b) 2 years
- c) 5 years
- d) 10 years

Question 16

When carrying out testing for initial verification purposes, the correct sequence of initial tests are:

- a) Continuity of protective conductors, continuity of ring final circuit conductors, insulation resistance and polarity
- b) Continuity of protective conductors, continuity of ring final circuit conductors, earth electrode resistance and polarity
- c) Continuity of ring final circuit conductors, insulation resistance, polarity and earth electrode resistance
- d) Continuity of protective conductors, insulation resistance, polarity and earth electrode resistance

Question 17

With regard to precautions before testing, HSE Guidance Note GS38 requires:

- a) Written approval be obtained from the Local Authority
- b) A risk assessment should be carried out
- c) Written notification is given to the Health and Safety Executive
- d) Written approval is received from the construction site manager

Question 18

When testing an RCBO to BS EN 61009 RCD at 100% of its rated residual operating current, the RCBO should operate within:

- a) 300 ms
- b) 40 ms
- c) 150 ms
- d) 200 ms

Question 19

The maximum measured earth fault loop impedance (Z_s) for a final circuit protected by a 20 A BS 3871 Type 2 circuit-breaker at an ambient temperature of 20°C would be:

- a) 1.47 Ω
- b) 1.30 Ω
- c) 0.83 Ω
- d) 0.49 Ω

Question 20

The test instrument used for testing the continuity of protective conductors should be set to the:

- a) low resistance Ω scale
- b) high resistance Ω scale
- c) $M\Omega$ scale
- d) 500 V scale

Scottish Building Standards Questions**Question 21**

Regulation 8 of the Building (Scotland) Regulations 2004 requires one of the following:

- a) Materials used in construction to be suitable for their purpose
- b) The making safe of power supplies during demolition work
- c) Provision of a service to fulfil the purpose of the regulation
- d) Compliance with the basic requirement for constructions work given in the mandatory Building Standards

Question 22

The maximum depth of a vertical chase (raggle) in a cavity wall should be no deeper than:

- a) 1/3 thickness of a leaf
- b) 1/4 thickness of a leaf
- c) 1/6 thickness of a leaf
- d) 1/8 thickness of a leaf

Question 23

What certificate is provided by an Approved Certifier of Construction to confirm that work carried out complies with the Building Regulations?

- a) An Electrical Installation Certificate
- b) A Completion Certificate
- c) A Certificate of Construction
- d) A Building Warrant

Question 24

Smoke and heat alarms including an integral sounder should produce an output at what level at 3 m.

- a) 65 dB(A)
- b) 85 dB(A)
- c) 55 dB(A)
- d) 60 dB(A)

Question 25

A Category L2 system should be installed in Entertainment buildings and assembly buildings when there are:

- a) No more than 60 occupants
- b) No more than 100 occupants but more than 60
- c) More than 300 occupants
- d) No more than 300 occupants but more than 100

Question 26

A decentralised mechanical extract ventilation (dMEV) installed in a utility room should provide a minimum continuous and boost extraction rate of?

- a) 6 litres/sec with 13 litres/sec boost
- b) 3 litres/sec with 6 litres/sec boost
- c) 4 litres/sec with 8 litres/sec boost
- d) 10 litres/sec with 15 litres/sec boost

Question 27

What type of work in Non-Domestic Building requires a Building Warrant.

- a) Electrically operated locks in an area with no public access
- b) Electrical work associated with a new boiler (large) in an area with public access
- c) Re-wiring in an area with no public access
- d) Installation of outdoor luminous tube signs

Question 28

What is the minimum distance from a corner that an outlet or control can be fitted.

- a) 150 mm
- b) 300 mm
- c) 350 mm
- d) 400 mm

Question 29

What is the minimum number of 13A socket outlets that should be installed in a kitchen of a dwelling.

- a) 3
- b) 4
- c) 6
- d) 8

Question 30

One of the following is the baseline level for a non-domestic building to meet the bronze level of sustainability:

- a) It must include a low or zero carbon generating technology
- b) It must comply with the functional standards in Sections 1 to 6 of the SBS Technical Handbook (Non-domestic)
- c) It must include a home office space
- d) It must have an electric vehicle charging point

SJIB National Working Rules Questions

Question 31

Rule B10.1 'STANDARD WORKING HOURS' of the SJIB National Working Rules, states that the standard working week shall be:

- a) 37½ hours worked on 5 days, Monday to Friday inclusive
- b) 38 worked on 5 days, Monday to Friday inclusive
- c) Any 37½ hours worked between Monday to Friday inclusive
- d) Any 37½ hours worked on any 5 days

Question 32

Rule B12.3 'UTILISATION OF WORKING HOURS' of the SJIB National Working Rules, states that poor timekeeping and/or unauthorised absences from the place of work during working hours:

- a) Shall be permitted only once per working week
- b) Shall warrant instant dismissal
- c) Will be paid for at the normal rate if a satisfactory explanation is provided
- d) Shall be construed as misconduct

Question 33

From SJIB rules **Appendix B6**, which of the following travel expenses **incurred by operatives booking on and off at the job** is NOT taxable?

- a) Mileage allowance between the shop and the job
- b) Fares for periodic return journeys to the shop
- c) Lodging allowance (if suitable lodging isn't available within 15 miles)
- d) Mileage rate between the shop and the job

Question 34

Rule B38.2 'RATIO OF APPRENTICES' of the SJIB National Working Rules, states that on any job the ratio of apprentices shall:

- a) Not exceed 2 apprentices to 1 skilled employee
- b) Not exceed 3 apprentices to 1 skilled employee
- c) Not exceed 30% of the company workforce
- d) Not exceed 1 apprentice to 1 skilled operative

Question 35

Rule B9.1 'PAYMENT OF WAGES' of the SJIB National Working Rules, states that wages shall normally be paid:

- a) In a manner that suits the employer only
- b) By credit transfer
- c) In a manner that suits the operative only
- d) By cheque or cash

Question 36

Rule B37.8 'TOOLS' of the SJIB National Working Rules, states that when working on or near live installations:

- a) Insulated tools must be used
- b) Standard tools in good working order can be used
- c) Only new tools must be used
- d) Tools specially provided by the employer to be used

Question 37

Rule B23.1 'RESPONSIBILITY PAYMENTS' of the SJIB National Working Rules, states the supervision of apprentices or other trainees:

- a) Does not attract responsibility money
- b) Does attract responsibility money
- c) Attracts responsibility money at time and one third
- d) Attracts responsibility money of 10% of the normal rate of pay

Question 38

Rule D4.1 '**HOLIDAYS**' of the SJIB National Working Rules, states that arrangements for the taking of Annual Holidays, shall be:

- a) Not less than 3 months notice
- b) Not less than 2 months notice
- c) Agreed in advance between the employer and the operative
- d) Not required to give any notice

Question 39

Rule B29.1 '**CALL-OUT**' states that for emergency Call-Outs when an Operative, having returned home after his normal finishing time, is called upon to return to work on a weekday before his next normal starting time, he shall be paid at:

- a) Time and a half for the period of time spent physically at the job
- b) Time and one third from home to home
- c) Time and a half for all hours worked from home to home
- d) Double time for the period of time spent physically at the job

Question 40

Rule B33.2 '**PROTRACTED JOURNEYS**' states that where transport between the job and the shop is by air, then a return journey shall be arranged every ___?___ weeks, regardless of distance.

- a) 2
- b) 4
- c) 6
- d) 8

Statutory Regulations Questions

Question 41

From the Statutory Instruments, 2002 No. 2665, ELECTRICITY, The Electricity Safety, Quality and Continuity Regulations 2002, **PART V1 Generation, Parallel Operation, 22.- (1)**, states in these Regulations, that no person shall install or operate a source of energy which may be connected in parallel with a distributor's network unless:

- a) The source of energy is part of a low voltage consumer's installation and complies with the Electricity at Work Regulations
- b) The source of energy is part of a low voltage consumer's installation and complies with British Standard Requirements
- c) The source of energy is part of a low voltage consumer's installation and complies with the Health and Safety at Work
- d) The source of energy is part of a low voltage consumer's installation and complies with the Building (Scotland) Regulations

Question 42

From the Statutory Instruments, 2002 No. 2665, ELECTRICITY, The Electricity Safety, Quality and Continuity Regulations 2002, **PART V11, Equipment on a consumer's premises, 24.-(1)**, states in these Regulations, that a distributor or meter operator shall ensure that each item of his equipment which is on a consumer's premises but not under the control of the consumer is:

- a) In compliance with BS 7671 (IET Wiring Regulations)
- b) Suitable for its purpose
- c) Enclosed in a locked or sealed container
- d) Located near the main entrance to the building

Question 43

From the Statutory Instruments, 2002 No. 2665, ELECTRICITY, The Electricity Safety, Quality and Continuity Regulations 2002, **SCHEDULE 2, MINIMUM HEIGHT ABOVE GROUND OF OVERHEAD LINES**, states that for nominal voltages not exceeding 33,000 volts the maximum height of lines over roads is:

- a) 6.7 metres
- b) 7.3 metres
- c) 5.8 metres
- d) 5.2 metres

Question 44

The Electricity at Work, Safe working practices, **Introduction**, states that this guidance uses the term 'high voltage' where the voltage exceeds low voltage. With Low voltage in relation to an alternating current being a voltage:

- a) Exceeding 50 volts measured between phase conductors (or between phase conductors and earth) but not exceeding 1000 volts
- b) A voltage not exceeding 50 volts
- c) A voltage exceeding 240 volts measured between live conductors (or between live conductors and earth) but not exceeding 1500 volts
- d) A voltage exceeding 1000 volts

Question 45

From the Electricity at Work, Safe working practices, **Assessment procedure for deciding whether to work dead or live**, states that providing the other requirements of Regulation 14 have been met, live working can still only be justified if suitable precautions are taken to prevent injury arising from risks identified in the assessment. One of the risks covered in the assessment will be:

- a) Only properly insulated tools should be used
- b) The risk of injury as a result of the lack of supervision
- c) The lack of experience and electrical qualifications of the operative
- d) If it is unreasonable in any other circumstance to work dead

Question 46

From the Electricity at Work, Safe working practices, **Figure 1**, Assessment procedure for safe working practices, if you were going to undertake dead working or live working, the next step is:

- a) Specify correct system of work
- b) Specify level of supervision and whether accompaniment is necessary
- c) Select and instruct competent workers
- d) Plan and make preparations for the work

Question 47

From the Memorandum of guidance on the Electricity at Work Regulations 1989, Regulation 2, **Interpretation**, states that the term "prevent danger" should be read as:

- a) "Prevent the risk of danger"
- b) "Prevent the risk of electrical injury"
- c) "Prevent the risk of injury"
- d) "Prevent the risk of non-electrical injury"

Question 48

From the Memorandum of guidance on the Electricity at Work Regulations 1989, Regulation 6, **Adverse or hazardous environments**, states that one of the conditions at which the regulation is directed is:

- a) Corrosive conditions
- b) Electrical damage
- c) Areas accessible to the public
- d) Areas accessible to vehicular traffic

Question 49

From the Memorandum of guidance on the Electricity at Work Regulations 1989, Regulation 10, Connections, states that the requirements of suitability of connections applies:

- a) More to temporary connections due to possible risk of injury
- b) More to permanent connections if they form part of a permanent installation
- c) Equally to temporary and permanent connections if carried out by a qualified person
- d) Equally to temporary and permanent connections

Question 50

From the Memorandum of guidance on the Electricity at Work Regulations 1989, Regulation 14, **Work on or near live conductors**, states that one of the suitable precautions to prevent injury is:

- a) The use of an additional trained person adjacent to a means of isolation
- b) The use of suitable insulated barriers or screens
- c) The use of a person who is a properly trained first aider
- d) The use of a permit-to-work system