

Questions & Answers for Examination 2382-10 Requirements for

1. The external influence code ACM requires IP rated equipment to
 - a. IPX4
 - b. IPX1
 - c. IPO
 - d. IPX2

2. AS 7671 is a
 - a. document designed solely for the use of electricians
 - b. legal document used in a court of law
 - c. Bon statutory document
 - d. statutory document

3. The fundamental principles of BS7671 state that persons and livestock shall be protected against injury as a consequence of over voltages originating from
 - a. motors running
 - b. the operation of circuit breakers
 - c. atmospheric events
 - d. voltage recovery

4. The fundamental principles of BS 7671 covering the protection against voltage disturbances etc., states that the installation shall have an adequate level of immunity against
 - a. the weather
 - b. electromagnetic disturbances
 - c. voltage loss
 - d. vibration

5. What is the maximum As for a 10A type C circuit breaker protecting a standard discharge type lighting circuit?
 - a. 1.15 Ohms
 - b. 2.30Ohms
 - c. 1.44Ohms
 - d. 1.92Ohms

6. A double insulated hand held electric drilling machine is known as
 - a. class II equipment
 - b. a DeWalt
 - c. class HI equipment
 - d. class I equipment

7. An electrical installation certificate should be signed by
 - a. the local authority
 - b. a competent person
 - c. the customer
 - d. the REC

8. When considering external influences, the code AD4 requires IP rated equipment to
 - a. IPXO
 - b. IPX1
 - c. IPX4
 - d. IPX5

9. The external influence code AD1 requires IP rated equipment to
 - a. IPX4
 - b. IPX1
 - c. IPXO
 - d. IPX2

10. When considering external influences, the code AA5 relates to the ambient temperature range
 - a. -5°C to +45°C
 - b. -65°C to +5°C
 - c. +5°C to +40°C
 - d. -25°C to 0°C

11. When considering external influences, the code AA1 relates to the ambient temperature range
- 5°C to +45°C
 - 60°C to +5°C
 - +5°C to +40°C
 - 25°C to 0°C
12. Electrical installations shall be divided into circuits to
- allow easier access to the installation
 - allow more even distribution of power
 - allow for expansion without changing the maximum demand
 - reduce electromagnetic interference
13. One method of determining the external loop impedance is by taking a reading at
- the origin of supply
 - the supply and furthest outlet
 - the supply and subtracting the values of $R1 + R2$
 - the furthest outlet from the supply origin
14. The maximum disconnection time for a 230V a.c. final circuit not exceeding 32 amps, with a TT supply is
- 3s
 - 0.2s
 - 0.5s
 - 5ms
15. The maximum Z_s for a 16A Type B circuit breaker protecting a fixed appliance is
- 1.87 Ohm
 - 0.87Ohm
 - 2.40Ohm
 - 2.87Ohm
16. Undervoltage protection is required when the restoration of power may cause
- accidental RCD tripping
 - unexpected stalling of the motor
 - overload activation
 - unexpected start-up of the machinery
17. A device which cuts off all or part of an installation from every source of electrical energy provides
- emergency switching
 - isolator
 - a fireman's switch
 - partial disconnection
18. For a 32A Type B circuit breaker protecting a standard final ring circuit, the maximum Z_s would be
- 0.70 Ohm
 - 0.30 Ohm
 - 1.44 Ohm
 - 0.20 Ohm
19. In a TT installation, distribution circuits must satisfy a disconnection time of
- 5s
 - 1s
 - 0.6s
 - 0.2s
20. A residual current device (RCD) works by
- a magnetic device operating in the event of a fault between live and earth «-> CORRECT ANSWER
 - a magnetic device operating in the event of a fault between neutral and earth
 - a thin element operating in the event of a fault between neutral and earth
 - a thin element operating in the event of a fault between live and earth

21. A RCBO offers protection against
- short circuit current
 - short circuit and earth fault current
 - short circuit and overload current
 - basic contact
22. Protective measures against electric shock can be achieved by automatic disconnection of the supply and in systems additional protection by means of an rcd shall be provided for
- mobile equipment with a current rating exceeding 32 A
 - mobile equipment with a current not exceeding 22 A
 - socket outlets with a rated current exceeding 20 A
 - socket outlets with a rated current not exceeding 20 A
- systems additional protection by means of an rcd shall be provided for
23. Protective measures against electric shock can be achieved by automatic disconnection of the supply and in systems additional protection by means of an rcd shall be provided for
- socket outlets with a rated current exceeding 20 A
 - socket outlets with a rated current not exceeding 13 A
 - mobile equipment with a current rating not exceeding 32 A
 - mobile equipment with a current rating exceeding 32 A
24. In a.c. systems in the event of the failure of basic protection, additional protection may be provided by
- supplementary bonding
 - a time delay 100mA RCD
 - an RCD with an operating current not exceeding 30mA
 - electrical separation
25. If a fault occurs in the HV system, and a magnitude of fault voltage of 430 volts occurs between exposed conductive parts and earth on the LV installation. What is the maximum tolerable duration of the fault?
- 10 ms
 - 100 ms
 - 200 ms
 - 300 ms
26. If a Line conductor of an IT system is earthed accidentally, the insulation and components rated for the Line to Neutral voltage can be temporarily stressed with a higher voltage. What value can this stress voltage reach up to?
- $U = \sqrt{3} U_0$
 - $U = 3U_0$
 - $U = V U_0$
 - $U = U_0$
27. Nuisance tripping from a large transformer installation can be prevented by
- the use of an RCD
 - the use of a C type MCB
 - the use of a B type MCB
 - the use of a D type MCB
28. In order to reduce the effects of eddy currents when conductors are drawn through a steel conduit system, they should be arranged so that
- they are terminated in the correct phase sequence
 - each conductor of an individual circuit takes approximately the same current
 - they are physically separated from the conductors of other circuits within the conduit
 - they are not individually surrounded by the ferrous material -> CORRECT ANSWER
29. If a cable is buried in a wall less than 50mm depth and is not protected by metallic enclosures, the additional protection required is
- RCD protection -
 - MCB protection
 - supplementary bonding
 - external notification of cable routes

30. At which one of the following terminations would a warning notice NOT need to be attached
- a copper water pipe
 - a bonded gas pipe
 - an earthing terminal within a consumer unit
 - an earth electrode
31. When determining design current, the correction factor that is applied to a BS3036 rewirable fuse is
- 0.752
 - 0.527
 - 0.725
 - 1.725
32. A BS1361 protective device is also known as a
- circuit breaker
 - cartridge fuse
 - RCD
 - semi enclosed rewirable fuse
33. An installation protected by an RCD shall have a fixed notice stating
- the test button should be pressed occasionally
 - the test button should be pressed monthly
 - the test button should be pressed quarterly
 - the test button should be pressed at 6 monthly intervals
34. When insulated a PEN conductor shall be identified with
- blue insulation along its length
 - green insulation and blue markings at the termination
 - green and yellow insulation and blue markings at the termination
 - green and yellow insulation along its length
35. Outdoor lighting does NOT involve
- shelters
 - festoon lighting
 - road traffic signals
 - floodlighting
36. Where it is necessary to install cables within a wall consisting of a metal construction, the circuit should
- adequately bond the studwork
 - be RCD protected
 - be MCB protected
 - be sheathed in metallic conduit
37. Where it is necessary to limit the consequences of the risk of fire due to fault currents, an RCD
- shall be installed at the end of the circuit to be protected
 - shall be installed at the origin of the circuit to be protected
 - is used to switch off the line conductor in the event of a fault
 - is used to switch off the neutral conductor in the event of a fault
38. In Great Britain the use of Combined protective and neutral (PEN) conductors is prohibited in consumers installations by which regulations?
- The Electricity at Work Regulations 1989
 - The Supply of Machinery (Safety) Regulations 1992
 - The IEE Wiring Regulations
 - The Electricity Safety, Quality and Continuity Regulations 2002

39. In Great Britain the use of Combined protective and neutral (PEN) conductors is prohibited in consumers installations. One of the exceptions from this is
- where the supply is feeding an agricultural installation
 - where the installation is supplied by a privately owned transformer which has a metallic connection with the distributors network
 - where the supply is obtained from a private generating plant
 - where the supply is feeding a swimming pool
40. Where a generating set is used as an additional source of supply in parallel with other sources, it shall be instated
- on the supply side of all the protective devices for the final circuits of the installation with a number of additional requirements
 - on the supply side of all the protective devices for the final circuits of the installation with no additional requirements
 - on the load side of all the protective devices for the final circuits of the installation with no additional requirements
 - on the load side of all the protective devices to the final circuit which must be connected by plug and socket
41. Regarding auxiliary supplies to safety services, the maximum changeover time refers to
- how long the safety source can supply the rated power output to the safety service
 - the frequency (in cycles per second) of the auxiliary supply feeding the safety service
 - how often maintenance has to be carried out on the auxiliary supply
 - the time it takes for the safety source to supply the power to the safety service, after the loss of the main power supply
42. The minimum value of insulation resistance test performed on a PELV installation is
- 10.0 MOhm
 - 2.0 MOhm
 - 0.3 MOhm
 - 0.5 MOhm
43. The minimum value of insulation resistance test performed on a SELV installation is
- 99.0 MOhm
 - 2.0 MOhm
 - 0.3 MOhm
 - 0.5 MOhm
44. During the initial verification of an installation, which of the following forms part of the checklist?
- maximum demand and diversity
 - Design briefs*
 - contractors notes
 - presence of diagrams and instructions
45. An earth fault loop impedance test performed on a final ring circuit will record
- the external loop impedance
 - the resistance of the line and protective conductors and external loop impedance
 - the resistance of the line and protective conductors
 - the protective conductor resistance
46. A polarity test would be conducted to verify
- every fuse and single pole device is connected in the line conductor only -
 - there is sufficiently low resistance to operate the protective device within its limits
 - there is sufficient circuit protection
 - there is no breakdown of the conductor insulation
47. The minimum value of insulation resistance of a PELV circuit is
- 0.5 MOhm
 - 1MOhm
 - 1.5 MOhm
 - 5MOhm

48. Within an agricultural installation, bonding conductors can be
- 6.0mm² aluminium conductors
 - 4.0mm² aluminium conductors
 - 4.0mm² copper conductors
 - 5.0mm² copper conductors
49. Self supported suspension cables within agricultural situations should be
- at a height of a least 2m
 - at a height of a least 4m
 - at a height of a least 6m
 - at a height of a least 10m
50. If SELV or PELV is used within agricultural premises, barriers or enclosures must conform to at least
- IP4X
 - IPXXB
 - IPX4
 - IP67
51. Within zone 2 of an outdoor swimming baths where no water jets are used, installed electrical equipment should be rated
- IPX4
 - IP2X
 - IPXXB
 - 1PX8
52. In an area containing a bath or a shower, socket outlets must be installed
- 3m horizontally from zone 1
 - 3m horizontally from zone 0
 - 3m horizontally from zone 2
 - within zone 2 but outside zone 1
53. Where contact with skin or footwear is likely, the floor temperature of an underfloor heating installation should be limited to
- 20°C
 - 35°C •
 - 40°C
 - 70°C
54. A mobile unit should have a connection between the
- live and neutral
 - neutral and earth
 - vehicle chassis and main bonding terminal
 - battery terminals and supply
55. On the d.c. side of a PV power supply system, the type of insulation that is preferable is
- Class II-
 - Class I
 - C XLPE
 - 1000v VDS
56. In marina installations that are NOT in an area subject to vehicle movement, overhead distribution cables shaft be installed at a height of
- 5.5m
 - 4.5m
 - 6.5m
 - 3.5m
57. In areas that are not subject to vehicle movement on a caravan site, overhead distribution cables shall be installed at a heighth of
- 6m
 - 3.5m
 - 5m
 - 10m

58. BS 6004 relates to

- a. emergency lighting
- b. electrical cables
- c. 13A plug cartridge fuses
- d. RCDs

59. BS 5266 relates to

- a. emergency lighting -
- b. electrical cables
- c. 13A plug cartridge fuses
- d. 13A plugs

60. The correction factor for three multicore cables installed in single layer fashion *on* a wail is

- a. 0.75
- b. 0.85
- c. 0.79
- d. 0.99

Answers

1	A
2	C
3	C
4	B
5	B
6	A
7	B
8	C
9	C
10	C
11	B
12	D
13	A
14	B
15	D
16	D
17	B
18	C
19	B
20	A
21	B
22	D
23	C
24	C
25	D
26	A
27	D
28	D
29	A
30	C

31	C
32	B
33	C
34	C
35	B
36	B
37	B
38	D
39	C
40	B
41	D
42	D
43	D
44	D
45	B
46	A
47	A
48	C
49	C
50	B
51	A
52	A
53	B
54	C
55	A
56	D
57	B
58	B
59	A
60	C