Questions & Answers for Examination 2382-10 Requirements for Elec' Installations

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

2. BS 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 Zs 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
a. -5°C to +45°C
b. -60°C to +5°C
c. +5°C to +40°C
d. -25°C to 0°C

12. Electrical installations shall be divided into circuits to
a. allow easier access to the installation
b. allow more even distribution of power
c. allow for expansion without changing the maximum demand
d. reduce electromagnetic interference

13. One method of determining the external loop impedance is by taking a reading at
a. the origin of supply
b. the supply and furthest outlet
c. the supply and subtracting the values of R1 + R2
d. 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
a. 3s
b. 0.2s
c. 0.5s
d. 5ms

15. The maximum Zs for a 16A Type B circuit breaker protecting a fixed appliance is
a. 1.87 Ohm
b. 0.87Ohm
c. 2.40Ohm
d. 2.87Ohm

16. Undervottage protection is required when the restoration of power may cause
a. accidental RCD tripping
b. unexpected stalling of the motor
c. overload activation
d. 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
a. emergency switching
b. isolatior
c. a fireman's switch
d. partial disconnection

18. For a 32A Type B circuit breaker protecting a standard final ring circuit, the maximum Zs would be
a. 0.70 Ohm
b. 0.30 Ohm
c. 1.44 Ohm
d. 0.20 Ohm

19. In a TT installation, distribution circuits must satisfy a disconnection time of
a. 5s
b. 1s
c. 0.6s
d. 0.2s

20. A residual current device (RCD) works by
a. a magnetic device operating in the event of a fault between five and earth «-> CORRECT ANSWER
b. a magnetic device operating in the event of a fault between neutral and earth
c. a thin element operating in the event of a fault between neutral and earth
d. a thin element operating in the event of a fault between live and earth

21. A RCBO offers protection against
a. short circuit current
b. short circuit and earth fault current
c. short circuit and overload current
d. 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 red shall be provided for
a. mobile equipment with a current rating exceeding 32 A
b. mobile equipment with a current not exceeding 22 A
c. socket outlets with a rated current exceeding 20 A
d. 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 red shall be provided for
a. socket outlets with a rated current exceeding 20 A
b. socket outlets with a rated current not exceeding 13 A
c. mobile equipment with a current rating not exceeding 32 A
d. 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
a. supplementary bonding
b. a time delay 100mA RCD
c. an RCD with an operating current not exceeding 30mA
d. 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?
a. 10 ms
b. 100 ms
c. 200 ms
d. 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?
a. U=V3 U0
b. U=3U0
c. U=V U0
d. U=U0

27. Nuisance tripping from a large transformer installation can be prevented by
a. the use of an RCD
b. the use of a C type MCB
c. the use of a B type MCB
d. 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
a. they are terminated in the correct phase sequence
b. each conductor of an individual circuit takes approximately the same current
c. they are physically separated from the conductors of other circuits within the conduit
d. 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
a. RCD protection -
b. MCB protection
c. supplementary bonding
d. external notification of cable routes

30. At which one of the following terminations would a warning notice NOT need to be attached
a. a copper water pipe
b. a bonded gas pipe
c. an earthing terminal within a consumer unit
d. an earth electrode

31. When determining design current, the correction factor that is applied to a BS3036 rewirable fuse is
a. 0.752
b. 0.527
c. 0.725
d. 1.725

32. A BS1361 protective device is also known as a
a. circuit breaker
b. cartridge fuse
c. RCD
d. semi enclosed rewirable fuse

33. An installation protected by an RCD shall have a fixed notice stating
a. the test button should be pressed occasionally
b. the test button should be pressed monthly
c. the test button should be pressed quarterly
d. the test button should be pressed at 6 monthly intervals

34. When insulated a PEN conductor shall be identified with
a. blue insulation along its length
b. green insulation and blue markings at the termination
c. green and yellow insulation and blue markings at the termination
d. green and yellow insulation along its length

35. Outdoor lighting does NOT involve
a. shelters
b. festoon lighting
c. road trafic signals
d. floodlighting

36. Where it is necessary to install cables within a wall consisting of a metal construction, the circuit should
a. adequately bond the studwork
b. be RCD protected
c. be MCB protected
d. 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
a. shall be installed at the end of the circuit to be protected
b. shall be installed at the origin of the circuit to be protected
c. is used to switch off the line conductor in the event of a faun
d. 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?
a. The Electricity at Work Regulations 1989
b. The Supply of Machinery (Safety) Regulations 1992
c. The IEE Wiring Regulations
d. 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
a. where the supply is feeding an agricultural installation
b. where the installation is supplied by a privately owned transformer which has a metallic connection with the distributors
network
c. where the supply is obtained from a private generating plant
d. 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
a. on the supply side of all the protective devices for the final circuits of the installation with a number of additional requirements
b. on the supply side of all the protective devices for the final circuits of the installation with no additional requirements
c. on the load side of all the protective devices for the final circuits of the installation with no additional requirements
d. 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
a. how long the safety source can supply the rated power output to the safety service
b. the frequency (in cycles per second) of the auxiliary supply feeding the safety service
c. how often maintenance has to be carried out on the auxiliary supply
d. 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
a. 10.0 MOhm
b. 2.0 MOhm
c. 0.3 MOhm
d. 0.5 MOhm

43. The minumum value of insulation resistance test performed on a SELV installation is
a. 99.0 MOhm
b. 2.0 MOhm
c. 0.3 MOhm
d. 0.5 MOhm

44. During the initial verification of an installation, which of the following forms part of the checklist?
a. maximum demand and diversity
*b. Design brie*fs
c. contractors notes
d. presence of diagrams and instructions

45. An earth fault loop impedance test performed on a final ring circuit will record
a. the external loop impedance
b. the resistance of the line and protective conductors and external loop impedance
c. the resistance of the line and protective conductors
d. the protective conductor resistance

46. A polarity test would be conducted to verify
a. every fuse and single pole device is connected in the line conductor only -
b. there is sufficiently low resistance to operate the protective device within its limits
c. there is sufficient circuit protection
d. there is no breakdown of the conductor insulation

47. The minimum value of insulation resistance of a PELV circuit is
a. 0.5 MOhm
b. 1MOhm
c. 1.5 MOhm
d. 5MOhm

48. Within an agricultural installation, bonding conductors can be
a. 6.0mm2 aluminium conductors
b. 4.0mm2 aluminium conductors
c. 4.0mm2 copper conductors
d. 5.0mm2 copper conductors

49. Self supported suspension cables within agricultural situations should be
a. at a height of a least 2m
b. at a height of a least 4m
c. at a height of a least 6m
d. 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
a. IP4X
b. IPXXB
c. IPX4
d. IP67

51. Within zone 2 of an outdoor swimming baths where no water jets are used, installed electrical equipment should be rated
a. IPX4
b. IP2X
c. IPXXB
d. 1PX8

52. In an area containing a bath or a shower, socket outlets must be installed
a. 3m horizontally from zone 1
b. 3m horizontally from zone 0
c. 3m horizontally from zone 2
d. 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
a. 20°C
b. 35°C •
c. 40°C
d. 70°C

54. A mobile unit should have a connection between the
a. live and neutral
b. neutral and earth
c. vehicle chassis and main bonding terminal
d. battery terminals and supply

55. *On* the d.c. side of a PV power supply system, the type of insulation that is preferable is
a. Class II-
b. Class I
C XLPE
d. 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
a. 5.5m
b. 4.5m
c. 6.5m
d. 3.5m

57. In areas that are not subject to vehicle movement on a caravan site, overhead distribution cables shall be installed at a heigth of
a. 6m
b. 3.5m
c. 5m
d. 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