1 o/c1 Electrical installation design shall take into account
   a electromagnetic disturbances
   b direct lightning strikes
   c current world copper prices
   d local authority planning approval.

2 oc1 The selection of the type of wiring and method of installation is
      not influenced by
   a the nature of the location
   b the load current
   c the value of the prospective short-circuit current
   d the nature of the structure supporting the wiring.

3 o/c2 The symbol used to show that a BS 88 device has a motor circuit application
      is
   a gG
   b gM
   c I_2
   d I_2.

4 oc2 An area or temporary structure used for display, marketing or sales is defined
      as
   a a booth
   b a stand
   c an exhibition
   d a show.

5 Which of the following supply characteristics would need to be ascertained for a
   new domestic installation?
   a Number of points of utilization
   b The supply transformer type
   c The supply cable size
   d The nature of the current and frequency

6 o/c4 Basic protection may be provided by
   a barriers and enclosures to IPXXB or IP2X
   b fuses and circuit-breakers
   c supplementary equipotential bonding
   d backup protection.

7 o/c 4 - Which of the following items does not offer 'basic' protection:
   a a circuit protective conductor.
   b a socket outlet.
   c a lampholder.
   d equipotential bonding conductors.
8 18 o/c4 - Class II equipment is used as a measure of:
   a overvoltages.
   b indirect protection.
   c basic protection.
   d fault protection.

9 o/c4 table 41.3 - Maximum earth fault loop impedance, according to BS 7671:2008, for 6A Type B circuit breakers giving compliance to 0.4s disconnection time will be:
   a 7.67 ohms.
   b 8.00 ohms.
   c 8.52 ohms.
   d 16.4 ohms.

10 o/c4 table 41.1 - All final circuits supplied at 230V and not exceeding 32A shall have a maximum disconnection time not exceeding:
   a 0.2s.
   b 0.4s.
   c 0.8s.
   d 5.0s.

11 o/c 4 Which is a method of fault protection
   1 out of reach
   2 Reinforced insulation
   3 Obstacles
   4 Insulation of live parts

12 Oc4 An undervoltage device has operated and restoring the supply may cause danger. The reclosure of this device should be
   a automatic when under the supervision of a competent person
   b manually operated
   c possible only with the use of a key or tool
   d automatic with time delay.

13 o/c4 In locations with increased risks of fire, motors which are automatically or remotely controlled, or which are not continuously supervised, shall be protected against excessive temperature by
   a a protective device that is automatically reset
   b a protective device with manual reset
   c electronic monitoring equipment that resets
   d electronic monitoring equipment that restarts the motor.

14 o/c 5 - Circuits feeding fixed equipment used in highway power supplies shall have a maximum disconnection time of:
   a 0.2 seconds.
   b 0.4 seconds.
   c 2.0 seconds.
   d 5.0 seconds.
15 o/c 5 - A main switch must be capable of withstanding:
   a  the prospective short circuit current at that point.
   b  twice the earth loop fault current.
   c  twice the prospective short circuit current.
   d  twice the maximum demand.

16 o/c5 A wiring system is to be installed between a safety source and a main
distribution board. The risks required to be reduced to a minimum do not include
   a  short-circuit
   b  earth fault
   c  ageing
   d  fire.

17 o/c5 514.4.2 - Single core protective conductors coloured green and yellow shall have
one of the colours cover the surface at least and at most:
   a  30% and 70%.
   b  20% and 80%.
   c  50% and 50%.
   d  40% and 60%.

18 o/c5 A plug and socket-outlet may be used for switching off for mechanical
maintenance as long as it does not have aurating exceeding
   a  13A
   b  16A
   c  32A
   d  45A.

19 oc5 Where more than one firefighter's switch is installed on any one building,
each switch must be
   a  not more than 3.75m from the ground
   b  in a locked location to prevent nuisance operation
   c  electrically linked -
   d  clearly marked.

20 o/c6 A simple method to allow for measured values of loop impedance to be
effectively compared with tabulated maximum values is to correct these maximum
values by multiplying them by
   a  0.75
   b  0.8
   c  1.2
   d  1.8.

21 oc6 When completing an Electrical Installation Certificate, the person who does
not have to sign the certificate would be the
   a  tester
   b  client
22 o/c7 - Which one of the following protective measures is not applicable to equipment in Zone 2 of a swimming pool:
   a  individual protection by electrical separation.
   b  protection by obstacles.
   c  SELV.
   d  protection by an RCD in accordance with Regulation 415.1.1.

23 o/c7 Within a conducting location with restricted movement, supplies to 110 V mobile equipment must provide protection against electric shock by the use of
   a  electrical separation
   b  Class II protection
   c  obstacles
   d  PELV.

24 o/c7 The minimum cross sectional area for a cable carrying up to 25A in a caravan shall be:
   a  2.5mm².
   b  4mm².
   c  6mm².
   d  10mm².

25 o/c 7 - In marinas, equipment installed above a jetty and where it might be subject to water splashes shall have a degree of ingress protection to at least:
   a  IPX4.
   b  IPX5.
   c  IPX6.
   d  IPX7.

26 o/c 7 - If cleaning by use of water jets in a room containing a sauna heater electrical equipment shall have a degree of protection against ingress of at least:
   a  IP5X.
   b  IP X5.
   c  IP4X.
   d  IPX4.

27 o/c 7 - In agricultural premises an RCD may be used for protection against fire. The current rating should not exceed:
   a  30 mA.
   b  100 mA.
   c  300 mA.
   d  500 mA.

28 oc7 Electrical equipment in a circus installation must have a degree of protection of at least
a IP33
b IP4X
c IP44
d IPX8.

29 o/c 8 app7 - The positive and negative conductors in two-wire unearthed d.c. power circuits are identified by the colours:
a red and black.
b red and blue.
c brown and grey.
d brown and black.

30 oc8 A 2.5 mm² thermoplastic insulated and sheathed flat cable with protective conductor is laid in a ceiling beneath thermal insulation 80 mm thick in contact with the ceiling board, as shown in the figure below. What is its installed rating?
a 17 A
b 20A
c 21A
d 27 A

answers below
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1 o/c1 Electrical installation design shall take into account
   a. electromagnetic disturbances
   b. direct lightning strikes
   c. current world copper prices
   d. local authority planning approval.
   
   **Answer a**  See Part 1: Scope, Regulation 131.6.4.

2 o/c1 The selection of the type of wiring and method of installation is not influenced by
   a. the nature of the location
   b. the load current
   c. the value of the prospective short-circuit current
   d. the nature of the structure supporting the wiring.

3 o/c2 The symbol used to show that a BS 88 device has a motor circuit application is
   a. gG
   b. gM
   c. I_z
   d. I_2.
   
   **Answer b**  See Part 2: Definitions, Symbols.

4 o/c2 An area or temporary structure used for display, marketing or sales is defined as
   a. a booth
   b. a stand
   c. an exhibition
   d. a show.

5 Which of the following supply characteristics would need to be ascertained for a new domestic installation?
   a. Number of points of utilization
   b. The supply transformer type
   c. The supply cable size
   d. The nature of the current and frequency
   
   **Answer d**  See Part 3: Assessment of general characteristics, Regulation 313.1.

6 o/c4 Basic protection may be provided by
   a. barriers and enclosures to IPXXB or IP2X
   b. fuses and circuit-breakers
   c. supplementary equipotential bonding
   d. backup protection.
   
   **Answer a**  See Part 4: Protection for safety, Regulation 416.2.1.
7 o/c 4 - Which of the following items does not offer 'basic' protection:
   a  a circuit protective conductor.
   b  a socket outlet.
   c  a lampholder.
   d  equipotential bonding conductors.

8 18 o/c 4 - Class II equipment is used as a measure of:
   a  overvoltages.
   b  indirect protection.
   c  basic protection.
   d  fault protection.

9 o/c 4 table 41.3 - Maximum earth fault loop impedance, according to BS 7671:2008, for
   6A Type B circuit breakers giving compliance to 0.4s disconnection time will be:
   a  7.67 ohms.
   b  8.00 ohms.
   c  8.52 ohms.
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10 o/c 4 table 41.1 - All final circuits supplied at 230V and not exceeding 32A shall have a
    maximum disconnection time not exceeding:
    a  0.2s.
    b  0.4s.
    c  0.8s.
    d  5.0s.

12 o/c 4 Which is a method of fault protection
    1 out of reach
    2 Reinforced insulation
    3 Obstacles
    4 Insulation of live parts

12 Oc4 An undervoltage device has operated and restoring the supply may cause
danger. The reclosure of this device should be
   a  automatic when under the supervision of a competent person
   b  manually operated
   c  possible only with the use of a key or tool
   d  automatic with time delay.
   Answer b See Part 4: Protection for safety, Regulation 445.1.5.

13 o/c 4 In locations with increased risks of fire, motors which are automatically or
   remotely controlled, or which are not continuously supervised, shall be protected
   against excessive temperature by
   a  a protective device that is automatically reset
   b  a protective device with manual reset
   c  electronic monitoring equipment that resets
   d  electronic monitoring equipment that restarts the motor.
14 o/c 5 - Circuits feeding fixed equipment used in highway power supplies shall have a maximum disconnection time of:

a 0.2 seconds.
b 0.4 seconds.
c 2.0 seconds.
d 5.0 seconds.

15 o/c 5 - A main switch must be capable of withstanding:

a the prospective short circuit current at that point.
b twice the earth loop fault current.
c twice the prospective short circuit current.
d twice the maximum demand.

16 o/c 5 A wiring system is to be installed between a safety source and a main distribution board. The risks required to be reduced to a minimum do not include

a short-circuit
b earth fault
c ageing
d fire.

Answer c See Part5: Selection and erection of equipment, Regulation 560.8.3.

17 o/c 5 514.4.2 - Single core protective conductors coloured green and yellow shall have one of the colours cover the surface at least and at most:

a 30% and 70%.
b 20% and 80%.
c 50% and 50%.
d 40% and 60%.

18 o/c 5 A plug and socket-outlet may be used for switching off for mechanical maintenance as long as it does not have aurating exceeding

a 13A
b 16A
c 32A
d 45A.

19 o/c 5 Where more than one firefighter's switch is installed on any one building, each switch must be

a not more than 3.75m from the ground
b in a locked location to prevent nuisance operation
c electrically linked -
d clearly marked.

537.3.2.6

537.6.3
20  A simple method to allow for measured values of loop impedance to be effectively compared with tabulated maximum values is to correct these maximum values by multiplying them by
a  0.75
b  0.8
c  1.2
d  1.8.
Answer  b  See Part 6: Inspection and testing, Regulation 612.9, and Appendix 14.

21  When completing an Electrical Installation Certificate, the person who does not have to sign the certificate would be the
a  tester
b  client
c  constructor
d  designer.

22  Which one of the following protective measures is not applicable to equipment in Zone 2 of a swimming pool:
   a  individual protection by electrical separation.
   b  protection by obstacles
   c  SELV.
   d  protection by an RCD in accordance with Regulation 415.1.1.
Answer  a  See Part 7: Special installations or locations, Regulation 706.410.3.10.

23  Within a conducting location with restricted movement, supplies to 110 V mobile equipment must provide protection against electric shock by the use of
   a  electrical separation
   b  Class II protection
   c  obstacles
   d  PELV.
Answer  a  See Part 7: Special installations or locations, Regulation 706.410.3.10.

24  The minimum cross sectional area for a cable carrying up to 25A in a caravan shall be:
   a  2.5mm².
   b  4mm².
   c  6mm².
   d  10mm².

25  In marinas, equipment installed above a jetty and where it might be subject to water splashes shall have a degree of ingress protection to at least:
   a  IPX4
   b  IPX5
   c  IPX6
   d  IPX7.
26 o/c 7 - If cleaning by use of water jets in a room containing a sauna heater electrical equipment shall have a degree of protection against ingress of at least:
   a) IP5X.
   b) IPX5.
   c) IP4X.
   d) IPX4.

27 o/c 7 - In agricultural premises an RCD may be used for protection against fire. The current rating should not exceed:
   a) 30 mA.
   b) 100 mA.
   c) 300 mA.
   d) 500 mA.

28 o/c 7 Electrical equipment in a circus installation must have a degree of protection of at least
   a) IP33.
   b) IP4X.
   c) IP44.
   d) IPX8.

740.512.2

29 o/c 8 app7 - The positive and negative conductors in two-wire unearthed d.c. power circuits are identified by the colours:
   a) red and black.
   b) red and blue.
   c) brown and grey.
   d) brown and black.

30 o/c 8 A 2.5 mm² thermoplastic insulated and sheathed flat cable with protective conductor is laid in a ceiling beneath thermal insulation 80 mm thick in contact with the ceiling board, as shown in the figure below. What is its installed rating?
   a) 17 A
   b) 20A
   c) 21A
   d) 27 A
   app4 table 4A2 method 100 and table 4D5