Sample Questions - C&G 2382 17th Edition paper E

1 o/c 1 - To which of the following electrical installations does the IEE Regulations not apply:

a agricultural and horticultural premises.
b construction sites.
c systems for transmission of energy to the public .
d caravan sites

2 **oc1 BS 7671 includes the requirements for**

a fixed wiring for information and communication technology, signalling and control
b radio interference suppression equipment
c systems for the distribution of electricity to the public
d equipment on board ships and aircraft.

3 o/c2 - The term 'line conductor' replaces the previous term:

a live conductor.
b phase conductor.
c positive conductor.
d line cable.

4 oc2 **An assembly of PV arrays is defined as a**

a PVcell
b PV array cable
c PV generator
d PV a.c. module.

5 **oc3 Every installation must be divided into circuits as necessary in order to**

a reduce the cost of installation
b make installation easier
c install a cooker
d facilitate safe inspection, testing and maintenance.

6 **oc4 Regulations 434.2 and 434.2.1 do <u>not</u> allow the fault current protective device to be placed on the load side of the reduction in current-carrying capacity of a conductor if**

a the length of conductor is less than 3 m
b the length of conductor exceeds 3 m
c it is erected in such a manner as to reduce to a minimum the risk of fault current
d it is erected in such a manner as to reduce to a minimum the risk of fire or danger to persons.

7 o/c4 **Where arcs, sparks or particles at high temperature may be emitted by fixed equipment in normal service, the equipment shall be**

a totally enclosed in arc-resistant material
b protected by a 30 mA RCD
c enclosed to at least IP55
d accessible only by use of a key or tool.

8 o/c4 **The horizontal top surface of a barrier or enclosure which is readily accessible shall provide a degree of protection of at least**

a IP55orlP66
b IPX4orlPXX7
c IPXXBorlP2X
d IPXXDorlP4X.

9 o/c4 - To meet the requirements of BS 7671, all overcurrent protective devices, without back-up protection on the supply side, must be capable of:

a operating at their rated current.
b operating at a current lower that their rated current.
c withstanding the prospective short-circuit current at that point in the installation.
d not operating during a short-circuit fault.

10 o/c 4 - A circuit is protected by a 32A Type circuit breaker. If the value of Ze is 0.8 ohms what will be the maximum allowable value for (R1 + R2):

a 1.44 ohms.
b 2.24 ohms.
c 0.72 ohms.
d 0.64 ohms.

11 o/c4 - Class II equipment is used as a measure of:

a overvoltages.
b indirect protection.
c basic protection.
d fault protection.

12 o/c4 - To meet the requirements of BS 7671, all fault current protective devices without back-up protection on the supply side must be capable of:

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b not operating in the event of a fault.
c operating at a current lower that their rated current.
d operating at their rated current.

13 o/c4 **In the event of an earth fault on the HV side of a substation the LV installation may be affected by**

a V
b U
c I
d I^2t.

14 **oc5 When using the alternative method to Regulation 543.1.3 of sizing a copper protective conductor, the minimum size to be used when a copper line conductor has a csa of 50 mm^2 would be**

a 16mm^2
b 25 mm^2
c 35 mm^2
d 50 mm^2.

15 oc5 **A 70 °C thermoplastic insulated and sheathed cable to BS 6004 is installed in an ambient temperature of 25 °C for part of the run and then enters an area at 40 °C. The effect on the cable will be to**

a require clips at greater intervals
b reduce the voltage drop
c increase the bending radius
d decrease its current-carrying capacity.

16 **Where a 3-core cable, with cores coloured brown, black and grey, is used as a switch wire for two-way or intermediate control, the terminations of the conductors shall be identified using**

a red, blue and yellow tape
b black tape only on each core
c brown tape on the black and grey cores
d self-colour tape only.

17 o/c 5 531.2.2 - The magnetic circuit of the transformer of an RCD shall enclose:

a all line conductors of the protected circuit.
b all live and earth conductors of the protected circuit.
c neutral and earth conductors of the protected circuit.
d all live conductors of the protected circuit.

18 o/c5- A permanent warning notice must be fixed at or near the point of connection of every earthing conductor to an earth electrode bearing the words:

a Safety Electrical Connection – Do Not Remove.
b Earth Bonding – Danger.
c Safety Electrical Earth – Do Not Remove.

d Electrical Connection – Danger.

19 o/c 5 An industrial board supplies
4 x TP motors
2 x TP&N motors
4 x single phase ring circuits
2 x single phase lighting circuits

how many live conductors are there. (40)

20 o/c 6 - Methods of inspection and testing are described in Guidance Note:
a 1.
b 2.
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21 **oc6 Defects identified during an initial verification should be**
a noted on the certificate, and the client should be informed
b pointed out to the main contractor when the certificate has been completed
c made good before the certificate is issued
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22 **oc7 In conducting locations with restricted movement, supplies to handlamps shall be protected by**
a SELV,
b reduced low voltage supplies
c RCD or RCBO
d PELV.

23 **oc7 Equipment on a pontoon in a marina that is subject to impact to level AG2 should have a mechanical protection code of**
a IPX4
b IPX8
c IP55
d IK08.

24 o/c7 **Enclosures used to protect electrical equipment vulnerable to external influences in a horticultural installation shall have a minimum degree of protection of**
a IP22
b IP33
c IP44

d IP55.

25 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.

26 o/c 7 - Which of the following statements regarding Section 740 is incorrect:
a RCDs not exceeding 300mA shall be provided at the origin of the installation.
b The nominal supply voltage shall not exceed 230V/400V a.c.
c RCDs are not required for circuits protected by electrical separation.
d RCDs are required to protect socket-outlets rated greater than 32A.

27 o/c 7 Where an electric heating element is embedded in the floor of a bathroom it should be:
a covered by an earthed metal grid.
b buried to a depth not less than 50 mm.
c double insulated.
d supplied from an ELV source.

28 o/c7 **Additional protection for all lighting circuits within a sauna shall be provided by**
a an insulation monitoring device
b an RCD with a rated residual operating current not exceeding 30mA
c barriers and enclosures having a degree of protection of at least IP54
d ensuring the luminaires have a degree of protection of at least IPX3.

29 o/c 8 app 8 - For busbar trunking and powertrack systems, where protected against overload current by a BS 88 fuse, which of the following equations is correct:
a IZ less than or equal to In.
b In less than or equal to IZ.
c IZ less than or equal to Ib.
d IZ greater than or equal to Ib.

30 **oc8 External influences coded BE are classified as**
a nature of processed or stored materials
b conditions of evacuation in an emergency
c movement of air
d capability of persons.
Answers below

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Part 1 chap 11

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a IP55orIP66
b IPX4orIPXX7
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Answer d See Part 4: Protection for safety, Regulation 416.2.2.

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Table 4B1

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706.410.3.10

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709.512.2.1.4

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Answer c

See Part 7: Special installations or locations, Regulation 705.512.2.

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App5