

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

1 o/c 1 - A recommendation for the interval to the first periodic inspection shall be made by:

- a the installation electrician.
- b the main contractor.
- c the designer of the installation.
- d the test and inspection engineer.

2 oc1 **BS 7671 requires protection against electric shock to be provided , by basic and fault protection. One method common to both is**

- a the use of RCDs
- b the use of Class H equipment
- c preventing current from passing through any person or livestock
- d the use and implementation of equipotential bonding.

3 Oc 2 A corridor containing supporting structures for cables and joints and/or other elements of wiring systems, the dimensions of which allow persons to pass freely throughout the entire length, is known as

- a an access pathway
- b a cable tunnel
- c an access throughway
- d cable ducting.

4 oc2 **Band II voltage exceeds**

- a 2500 V d.c. between live conductors
- b 2500 V d.c. between conductors and Earth
- c 1000V a.c. rms
- d 120V d.c. ripple-free.

5 oc3 **Which one of the following is not a potential characteristic of equipment to be considered for harmful effects on other equipment?**

- a Transient overvoltages
- b d.c. feedback
- c Prospective short-circuit current
- d Excessive protective conductor current

6 77 oc4 **In the formula**

$$t = \frac{k^2 S^2}{I^2}$$

**what is the k factor for copper conductors insulated with 70 °C thermoplastic and an assumed initial temperature of 70 °C?**

- a 100/86
- b 115/103
- c 141
- d 143

**7 o/c4 Except where otherwise recommended by the manufacturer, spotlights and projectors rated at over 100 W and up to 300 W shall be installed at a minimum distance from combustible materials of**

- a 0.5m
- b 0.6m
- c 0.8m
- d 1.0m.

**8 o/c4 Additional protection against shock is provided by**

- a BS 3036 fuses
- b BS EN 60898 circuit breakers
- c time delayed 100 mARCDs
- d 30mARCDs.

**9 o/c4 - Which of the following statements is 'not' correct when considering the omission of devices for protection against overload for safety reasons. Overload devices may be omitted in circuits supplying:**

- a a lifting magnet.
- b fire alarm systems.
- c life support systems in locations where a TN system is incorporated.
- d a fire extinguisher device

**10 o/c 4 A 230V circuit is protected by a 50A Type B circuit-breaker to BS EN 60898. The minimum value of fault current to ensure compliance with maximum disconnection times is:**

- a 250A.
- b 500A.
- c 200A.
- d 315A.

**11 o/c4 app 4 table 4B1- A 230V circuit is protected by a 30 A semi-enclosed rewirable fuse to BS 3036 and the ambient temperature is 44°C. The tabulated current carrying capacity ( $I_t$ ) of a 70°C thermoplastic cable can be determined from:**

- a  $I_t = 29 / 0.725 \times 0.94$ .
- b  $I_t = 30 / 0.725 \times 0.79$ .
- c  $I_t = 29 / 0.725 \times 0.84$ .
- d  $I_t = 30 / 0.725 \times 0.87$ .

12 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

13 o/c4 Which of the following need not be tested under fire conditions to ensure compliance with non-flame propagating requirements?

- a Cables
- b Protective devices
- c Conduit systems
- d Trunking systems

14 oc5 The maximum current rating of a protective device protecting a circuit including B22 bayonet cap landholders would be

- a 5A
- b 6A
- c 16A
- d 20 A.

15 oc 5 A single-phase load of 13 A is supplied via a 15 A BS 1361 fuse using single-core 70 °C thermoplastic copper cables installed to method 4 (Reference Method B). The rating factor for grouping is 0.7 and for ambient temperature 0.87, and overload protection is to be provided. The minimum acceptable size cable would be

- a 1 mm<sup>2</sup>
- b 1.5 mm<sup>2</sup>
- c 2.5 mm<sup>2</sup>
- d 4 mm<sup>2</sup>.

16 o/c5 Which one of the following cannot be used as an earth electrode?

- a Earth plates
- b Welded reinforcement of concrete embedded in the earth
- c Earth tapes
- d Gas and water utility pipes

17 o/c5 Where underground power and telecommunication cables are in close proximity, they should be separated by a minimum distance of

- a 1000mm
- b 500mm
- c 300mm
- d 100mm.

18 o/c 5 Which of the following methods of protection against indirect contact is allowed in highway power supplies and equipment:

- a non-conducting locations.
- b earth-free equipotential bonding.
- c EEBADs.
- d placing out of reach.

19 o/c 5 - What is the value for 'k' when calculating the csa of a protective conductor incorporated in a sheathed cable:

- a 143.
- b 133.
- c 115.
- d 103.

20 o/c 6 - With regard to determining the frequency of periodic inspection and testing of an installation, which of the following does not need to be considered:

- a results of previous reports.
- b the installation use.
- c the frequency of maintenance.
- d the quality of the test instruments

21 oc6 Which of the following is not a requirement for periodic inspection and testing?

- a Ensuring the safety of persons and livestock from shock and burns
- b Ensuring the property is protected against damage from fire and heat due to an installation fault
- c Confirmation that the installation is not damaged as to impair safety
- d Confirmation that the supply to the installation meets all the requirements of the Electricity Safety, Quality and Continuity Regulations

22 The minimum height of overhead conductors on caravan sites, when installed in vehicle movement areas, is

- a 3.0m
- b 3.5m
- c 5.8m
- d 6.0m.

23 For marinas, the classification of external influence which does not need to be considered is

- a AD
- b AE

- c AF
- d AP.

24 o/c7 The maximum length of a flexible cord or cable for a caravan connection is

- a 1.8m
- b 6m
- c 10m
- d 25m.

25 o/c7 - Which of the following types of equipment is allowed to be installed within Zone 1 of a swimming pool:

- a switchgear.
- b controlgear.
- c 13A socket-outlets.
- d electrical equipment for fountains protected to at least AG2.

26 o/c7 - Which of the following statements regarding exhibitions, shows and stands is incorrect:

- a all sockets not exceeding 32A shall be protected by an RCD.
- b the nominal supply voltage shall not exceed 230V/400V a.c.
- c all electric motors shall have means of isolation.
- d signs shall be constructed of materials having an adequate heat resistance.

27 /c 7 The space under a bath, unless accessible only with a tool, is considered to be in zone:

- a 0.
- b 1.
- c 2.
- d 3.

28 o/c7 **13A socket-outlets are to be installed in a location containing a bathtub. The minimum distance they may be located from zone 1 is**

- a 1m
- b 2m
- c 3m
- d 4m.

29 o/c8 app12 - The voltage drop between the origin of an installation and any load point, supplied from a public LV system, should not be greater than:

- a 3% for lighting and 5% for other uses
- b 6% for lighting and 8% for other uses
- c 4% for lighting and 4% for other uses

d 5% for lighting and 5% for other uses -

**30 oc8 The ambient air temperature rating factor for 90 °C thermosetting cables operating in an ambient air temperature of 60 °C is**

a 0.50

b 0.56

c 0.63

d 0.71.

Answers below

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**Chap 13 131.2.2**

3 Oc 2 A corridor containing supporting structures for cables and joints and/or other elements of wiring systems, the dimensions of which allow persons to pass freely throughout the entire length, is known as

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**331.1**

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434.5.2 table 43.1

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422.3.1 422.4.2

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**Answer d** See Part 4: Protection for safety, Regulation 415.1.1.

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**Answer b** See Part 4: Protection for safety, Regulation 422.2.1.

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559.6.1.6

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App 4, 5.1.2

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**542.2.4**

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- b 500mm
- c 300mm
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**Answer d**

See Part5: Selection and erection of equipment, Regulation 528.2.

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**621.2**

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708.521.1.2

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709.512.2.1.1 - 709.512.2.1.4

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- b 6m
- c 10m
- d 25m.**

Answer d

See Part 7: Special installations or locations, Section 708, Fig 708, or Regulation 721.55.2.6.

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**Answer c** See Part 7: Special installations or locations, Regulation 701.512.3.

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- b 6% for lighting and 8% for other uses
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Table 4B1 app4