203: Electrical installations technology  
**Sample questions version A**

**Answer guide**

**There are 35 multiple choice questions. Answer them all, selecting the correct answer out of the four provided.**

**1. The earthing conductor, on the supply side of a TT system must be connected:**

**a) Through an impedance, then earth**

**b) To the Neutral**

**c) To an Earth Electrode**

**d) To the transformer or generator only**

**2. What does the abbreviation MET stand for:**

**a) Main Earth Tails**

**b) Meter Earth Termination**

**c) Main Equipotential Terminal**

**d) Main Earthing Terminal**

**3. Section 4 of the On Site Guide refers to:**

**a) Protection**

**b) Final Circuits**

**c) Earthing and Bonding**

**d) The Electrical Supply**

**4. The clamp used for main equipotential bonding conductors to water pipes must meet:**

**a) BS951**

**b) BS7671**

**c) BS8888**

**d) BS88**

**5. Which type of BS EN60898 MCB would generally be used for domestic applications:**

**a) Type A**

**b) Type B**

**c) Type C**

**d) Type D**

**6. Which cable would be best suited when feeding a distribution board in a detached garage:**

**a) PVC conduit and singles cable**

**b) SWA cable buried underground**

**c) Overhead flexible cord**

**d) Twin and earth clipped direct**

**7. What would be the r2 value for a 4mm copper cable at a distance of 37m at a temperature of 20⁰:**

**a) 0.09Ω**

**b) 0.17Ω**

**c) 0.35Ω**

**d) 0.70Ω**

**8. What is the rated short circuit capacity for BS88-3 type 1 fuse:**

**a) 6kA**

**b) 10kA**

**c) 16kA**

**d) 31.5kA**

**9. The main purpose of equipotential bonding is to:**

**a) Maintain metal parts in one area at the same potential**

**b) Avoid damage to equipment**

**c) Increase the impedance of the earth return path**

**d) Increase the earth loop impedance**

**10. What is the main reason that cable numbers are limited (following BS7671) in trunking:**

**a) To allow for further circuits to be fitted later**

**b) So they can be arranged neatly**

**c) To allow space so that the heating effect of the cables does not lead to large volt drops**

**d) To reduce electromagnetic induction between cables**

**11. What does R1 represent:**

**a) Line conductor resistance**

**b) CPC conductor resistance**

**c) End to end resistance of CPC**

**d) Line conductor impedance**

**12. What is the factor for 100mm x 38mm trunking:**

**a) 767**

**b) 1146**

**c) 1542**

**d) 2999**

**13. What is the maximum floor area served for 32 amp A2 Radial circuit:**

**a) 50m**

**b) 75m**

**c) 100m**

**d) Unlimited**

**14. What is the Ca rating factor of 90⁰ thermosetting cable at an ambient temperature of 25⁰:**

**a) 0.94**

**b) 0.96**

**c) 1.02**

**d) 1.03**

**15. The building regulations state that switches and sockets should be at a height of:**

**a) 1200mm**

**b) Between 450mm and 1200mm**

**c) Minimum height of 450mm**

**d) No higher than 1200mm**

**16. The specific term for the conductor used to connect exposed conductive parts, in a bathroom to earth is:**

**a) Equipotential bonding conductors**

**b) Supplementary bonding conductors**

**c) Circuit protective conductors**

**d) Earthing conductors**

**17. When applying diversity what is the assumed current demand of a 2 amp socket outlet:**

**a) maximum of 2 amps**

**b) 100 watt per lampholder**

**c) At least 0.5 amp**

**d) At least 1 amp**

**18. Which is the correct formula for calculating the size of the protective device**

**a) Ib ≥ In**

**b) Ib ≤ Ib**

**c) In ≤ It**

**d) Ib ≥ It**

**19. An example of an exposed conductive part would be**

**a) A radiator in a bathroom**

**b) The casing of a metal distribution board**

**c) A gas service pipe**

**d) Kitchen sink**

**20. What is the maximum distance 20mm rigid metal conduit run vertically should be supported:**

**a) 1.0m**

**b) 1.5m**

**c) 2.0m**

**d) 2.25m**

**21. Under BS7671 what is the number for a semi enclosed fuse:**

**a) BS88**

**b) BS 1362**

**c) BS EN60898**

**d) BS3036**

**22. An RCBO is a device which is used only as:**

**a) A Voltage Reduction Sensor**

**b) An Overload Protection Device**

**c) Overcurrent And Earth Leakage Protection**

**d) A Short Circuit Protection Device**

**23. The maximum earth fault loop impedance, stated in the On Site Guide, for a circuit protected by a 40 amp type C BS EN61009 RCBO:**

**a) 0.38Ω**

**b) 1.1Ω**

**c) 0.88Ω**

**d) 0.44Ω**

**24. The type of fault which occurs when a phase conductor comes in contact with a neutral conductor is called:**

**a) An Earth Loop Fault**

**b) A Short Circuit Fault**

**c) A Catastrophic Fault**

**d) An Overload Fault**

**25. Which one of the following is classed as a Band 1 circuit:**

**a) Radial socket Circuit**

**b) Ring Final Circuit**

**c) Distribution Circuit**

**d) Data Circuit**

**26. What supply system uses one conductor as a neutral and earth (PEN):**

**a) TT**

**b) TN-S**

**c) IT**

**d) TN-C-S**

**27. An item of equipment has a rating of IP1X, what does the 1 refer to:**

**a) Protection against solid object penetration**

**b) Protection against sun light penetration**

**c) Protection against gas penetration**

**d) Protection against water penetration**

**28. A circuit that feeds a shower is called a**

**a) Radial Circuit**

**b) Ring Final Circuit**

**c) Heating Circuit**

**d) General Circuit**

**29. What is Ze:**

**a) Total E.F.L.I of the circuit**

**b) E.F.L.I of the incoming supply**

**c) Maximum Earth Electrode resistance**

**d) Maximum Circuit Resistance**

**30. The main purpose of equipotential bonding is to:**

**a) Maintain adjacent metalwork at the same electrical potential**

**b) Improve earth loop impedance**

**c) Increase impedance of earth return**

**d) Avoid mechanical damage**

**31. What would the following formula be used for:**

**a) Velocity and Distance**

**b) Volt Drop**

**c) Circuit Impedance**

**d) Design Current**

**32. If a circuit had 360 amps of fault current which device would disconnect in the quickest time:**

**a)** **100mA Type C RCBO**

**b) 30mA Type B RCBO**

**c)** **10 amp Type C MCB**

**d) 6 amp Type D MCB**

**33. A method of calculating Zs is by the formula:**

**a) Zs = Ze + (R1 x R2)**

**b) Zs = Ze + (R1 + R2)**

**c) Zs =Ze + (R1 - R2)**

**d) Zs = Ze x (R1 + R2)**

**34. What does a Residual Current Device (RCD) offer protection against?**

**a) An overload current**

**b) A short circuit current**

**c) The nominal current**

**d) An earth fault current**

**35. What is the conduit factor for 25mm conduit if it has 3 bends and a distance of 2 metres:**

**a) 213**

**b) 388**

**c) 422**

**d) 692**