**G015+G046 Online Test**

Ref188 (a)

12 m pole is set 1.83 m in ground with three no 4/0 stranded conductors on a cross arm with the conductors level at the top of pole and 45.7 m balance of heavy load. The pole got 20.31 cm at top and 30.48 cm at bottom. No 4/0 conductor has diameter 1.34 cm and total ice thickness 2.54 cm. Wind pressure is 196.2 pa. Safety factor is in given table.

| **Type of wood** | **Ultimate stress** | **Safety factor** | **Cost** |
|---|---|---|---|
| Northern White Cedar | $24.4 \times 10^6$ N/ $m^2$ | 5 | Cheap |
| Western Red Cedar | $38.84 \times 10^6$ N/ $m^2$ | 8 | Cheap |
| Long leaf yellow pine | $51.3 \times 10^6$ N/ $m^2$ | 10 | Moderate |
| Wallaha | $72.79 \times 10^6$ N/ $m^2$ | 15 | Expensive |

The best selection of wood is

| | | | |
|---|---|---|---|
| A | Northern White Cedar | B | Western Red Cedar |
| C | Long leaf yellow pine | D | Wallaha |
| | Answer | | |

Ref188 (b)

In above problem, if the uniform diameter pole is utilized, the diameter is equal to

| | | | |
|---|---|---|---|
| A | 22.8 cm | B | 15 cm |
| C | 30.48 cm | D | 40 cm |
| | Answer | | |

Ref189

Determine the maximum deviation allowed on 11KN pin insulator for a 7/3.50 hard drawn copper conductor with a span of 150 m .The ultimate strength of he conductor is 26600N. The wind load is to be taken as 500Pa and the diameter of conductor is 10.5mm. Tension in conductor must not be more than 50% of ultimate strength. Transverse loading on pin insulator is not to exceed 40% of ultimate strength.

| | | | |
|---|---|---|---|
| A | 5 deg | B | 30 deg |
| C | 20 deg | D | 15.6 deg |
| | Answer | | |

Ref193

A 415V , 200 KVA, 50HZ , three phase load , power factor is improved from 0.75 to 0.9 lagging. Calculate the size of capacitor for delta connected capacitor bank.

| | | | |
|---|---|---|---|
| A | 100µF | B | 200µF |
| C | 300µF | D | 150µF |
| | Answer | | |

Ref198

In which of the methods, the booster transformer can be utilized?

| | | | |
|---|---|---|---|
| A | Controlling the sending end voltage | B | Controlling the receiving end voltage |
| C | Controlling the current in line that varies Powerfactor | D | |
| | Answer | | |

Ref203

If a relay always operates at pre-determined current, voltage and time setting, it is

| | | | |
|---|---|---|---|
| A | reliable | B | economical |
| C | efficient | D | operational |
| | Answer | | |

Ref208

Can over current & earth fault protections be combined?

| | | | |
|---|---|---|---|
| A | Not sure | B | No |
| C | Yes | D | Not applicable |
| | Answer | | |

Ref222

Buchholz relay should be utilized for

| | | | |
|---|---|---|---|
| A | Transformer protection | B | Motor protection |
| C | Generator protection | D | Power line protection |
| | Answer | | |

Ref227

If there are a lot of power flows out from the main line, the most suitable type of protection relay is

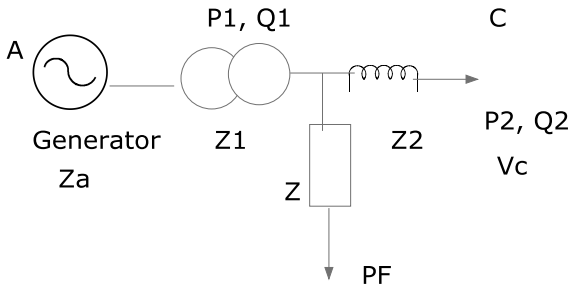
| | | | |
|---|---|---|---|
| A | Over current relay | B | Differential relay |
| C | Distance relay | D | Reverse power relay |
| | Answer | | |

Ref241

A generator operating at 50HZ delivers 1 pu power to infinite busbar through network in which resistance may be neglected. A fault occurs which reduces the machine power transferable to 0.4pu whereas before the fault. This power was 1.8 pu and after the clearance of the fault , this power was 1.8 pu and after the clearance of the fault, it is 1.3 pu. By use of equal area criterion, determine the critical clearing angle.

| | | | |
|---|---|---|---|
| A | 58.9 deg | B | 126 deg |
| C | 45 deg | D | 90 deg |
| | Answer | | |

Ref246




PF = 0.8  Za = j 1.5, Z1= j 0.25, Z2= j 0.5, P2= 0.5, Q2= 0.2  Vc = 1pu

| | | | |
|---|---|---|---|
| A | 3 pu | B | 2 pu |
| C | 1.29 pu | D | 5 pu |
| | Answer | | |

Ref251

The over current relays are allocated at _____ they provide the protection for_____.

| | | | |
|---|---|---|---|
| A | At the start of line, generator | B | At the end of line, load |
| C | Line section, sections of line | D | |
| | Answer | | |

Ref256

10 KV line with 700Ω. Is connected to 100Ω and 200Ω lines.

Calculate maximum current at junction is .

| | | | |
|---|---|---|---|
| A | 17.4 A & 8.7 A | B | 5A & 10A |
| C | 10A & 20A | D | 30A & 50A |
| | Answer | | |

Ref 211.

Maximum reach and maximum reach angle are found in

| | | | |
|---|---|---|---|
| A | Over current relay | B | Differential relay |
| C | Directional relay | D | Distance relay |
| | Answer | | |

Ref212

The operation of distance relay is based on

| | | | |
|---|---|---|---|
| A | Based on impedance | B | Based on current |
| C | Based on frequency | D | Based on power |
| | Answer | | |

Ref213

The characteristics curve of distance relay is

| | | | |
|---|---|---|---|
| A | Concentric circles | B | Parabola |
| C | Straight line | D | Hyperbola |
| | Answer | | |

Ref214.

Zone protection of distance relay is based on

| | | | |
|---|---|---|---|
| A | Zoning in accordance with voltage | B | Zoning in accordance with current |
| C | Zoning in accordance with power | D | Zoning in accordance with impedance |
| | Answer | | |

Ref215.

Operating & restraining voltage and current are utilized in

| | | | |
|---|---|---|---|
| A | Over current relay | B | Differential relay |
| C | Directional relay | D | Thermal over load relay |
| | Answer | | |

Ref216

Power line can be effectively protected by

| | | | |
|---|---|---|---|
| A | Over current relay | B | Differential relay |
| C | Directional relay | D | Distance relay |
| | Answer | | |

Ref217

Explain the operation of distance relay is based on .

| | | | |
|---|---|---|---|
| A | Based on impedance | B | Based on current |
| C | Based on frequency | D | Based on power |
| | Answer | | |

Ref218.

The shape of  characteristics of over current relay is

| | | | |
|---|---|---|---|
| A | Straight line | B | Circle |
| C | Curve | D | Pulse |
| | Answer | | |

Ref219.

Directional relay is also called

| | | | |
|---|---|---|---|
| A | Distance relay | B | Reverse power relay |
| C | Differential relay | D | Over current relay |
| | Answer | | |

Ref220

Earthing transformer  is utilized at

| | | | |
|---|---|---|---|
| A | Star connected winding side | B | Delta connected winding side |
| C | Zigzag connected winding side | D | None of above |
| | Answer | | |

Ref231

The suitable winding method for earthing transformer is

| | | | |
|---|---|---|---|
| A | Star/ Delta | B | Delta/Star |
| C | Delta/Delta | D | Zig Zag |
| | Answer | | |

Ref232

Reactors are utilized at busbar to

| | | | |
|---|---|---|---|
| A | Provide inductance | B | Limit short circuit current |
| C | Increase disruptive critical voltage | D | Earth leakage current flow path |
| | Answer | | |

Ref233

The best way to increase the level of disruptive critical voltage to reduce the possibility of corona is

| | | | |
|---|---|---|---|
| A | To increase conductor diameter | B | To use longer cross arm |
| C | To use hollow conductor that increase the conductor diameter | D | To increase insulation resistance |
| | Answer | | |

Ref234

Switching voltage velocity is

| | | | |
|---|---|---|---|
| A | V = 1/ √LC | B | V = √LC |
| C | V = L/C | D | V = 1/LC |
| | Answer | | |

Ref235

Which equipment is used in static VAR compensation system?

| | | | |
|---|---|---|---|
| A | Magnetic contactor | B | Thermal switch |
| C | Hall effect switch | D | Silicon Controlled Rectifier |
| | Answer | | |

Ref236

Poor power will cause

| | | | |
|---|---|---|---|
| A | Unnecessary over current flow in line | B | Smoother voltage |
| C | Ripple reduction | D | Wrong phase sequence |
| | Answer | | |

Ref237

Lighting strike near power transformer is protected by

| | | | |
|---|---|---|---|
| A | Arcing horn | B | Lightning arrester |
| C | Surge absorber | D | Arcing ring |
| | Answer | | |

Ref238

Lightning protection for power line is provided by

| | | | |
|---|---|---|---|
| A | Arcing horn | B | Lightning arrester |
| C | Surge absorber | D | Arcing ring |
| | Answer | | |

Ref239

Power surge protection is provided by

| | | | |
|---|---|---|---|
| A | Arcing horn | B | Lightning arrester |
| C | Surge absorber | D | Arcing ring |
| | Answer | | |