

- C. Improvement in SIL and reduction in corona loss
D. Increase in surrounding voltage gradient
31. The surge impedance of a 100 km long underground cable is 100 ohms. For a 50 km long cable it will be
A. 25 ohms B. 50 ohms C. 100 ohms D. 200 ohms
32. Bulk power transfer is done through HVDC line because of
A. reduced line power losses B. reduced harmonics
C. low cost of devices, D. simple and cheaper protection
33. Buchholz relay is commonly used for protection of
A. Feeders B. Transformers C. Generators D. bus bars
34. Mho relay is normally used for the protection of
A. Long transmission line B. short line C. Generators D. Transformer
35. In a simple series mass-damper-spring (M-B-K) system the natural frequency is given by
A. $\sqrt{(K/M)}$ B. K/M C. $\sqrt{(M/K)}$ D. $\sqrt{(B/M)}$
36. For a second order system with damping factor $\xi=0$, the maximum overshoot (M_p) and resonance peak (M_r) will be
A. $M_p = 100\%$, $M_r = 100\%$ B. $M_p = 100\%$, $M_r = \text{infinity}$,
C. $M_p = 0$, $M_r = 100\%$ D. $M_p = 0\%$, $M_r = 100\%$
37. The steady state error for unit step input applied to ufb system with $G(s) = 5/[s^2(s+2)]$ is
A. infinity B. 40 C. 0.825 D. 0
38. The breakaway point in the root locus of the given transfer function $G(s)H(s) = k(s+3)/s(s+2)$ will be at
A. Complex conjugates B. two -ve real axis points
C. Only one break away point D. one in RHP and one in LHP
39. For a stable system GM in dB and PM in degrees should be
A. both +ve B. GM +ve. PM -ve C. GM -ve. PM +ve D. both -ve
40. Phase angle of the system with $G(s) = e^{-s}/(s+1)$, at $\omega = 1$ rad/s will be...
A. $+12^\circ$ B. -45° C. -102° D. -180°
41. The total derivative of the function 'xy' is
A. $xdy + ydx$ B. $xdx + ydy$ C. $dx + dy$ D. $dx dy$

42. For the differential equation $\frac{dy}{dt} + 5y=0$ with $y(0) =1$ the general solution is
- A) e^{5t} B) e^{-5t} C) $5e^{-5t}$ D) none of these
43. The radial component of velocity for a particle moving in a circular path is
- A) zero B) radius itself C) variable D) none of the above
44. In which Quadrant the HP comes above XY line and VP comes below XY line for orthographic projection?
- A) First Quadrant B) Second Quadrant C) Third Quadrant D) Fourth Quadrant
45. The force applied on a body of mass 100 kg to produce an acceleration of 5 m/S^2 is
- A) 20 N B) 100 N C) 500 N D) None of these
46. Which was the major green building rating system developed by TERI
- A) GRIHA B) LEED C) BREEAM D) CASBEE
47. Which stage is directly responsible for the technical functioning of the product
- A) engineering function B) research function C) manufacturing function
D) commercial function
48. The first full-scale and usually fully functional forms of a new design is called
- A) Model B) prototype C) rapid prototype D) design attribute
49. The Air Pollution and Control Act, popularly known as the 'Air Act' was passed for the first time in US in
- A) 1955 B) 1999 C) 2004 D) 2015
50. Probability of a product successfully operation for a specific period of time is called
- A) reliability B) durability C) conformance D) serviceability