1. The stress developed at a point in the soil exactly below a point load at the surface is
   (a) Proportional to the depth of point.
   (b) Proportional to the square of the depth of point.
   (c) Inversely proportional to the depth of point.
   (d) Inversely proportional to the square of the depth of point.   Ans: (d)
2. An isobar is a curve which
   (a) Joins points of equal horizontal stress.
   (b) Joins points of equal vertical stress.
   (c) Joins points of zero vertical stress.
   (d) Joins points of maximum vertical stress.   Ans: (b)
3. If the entire semi-infinite soil mass is loaded with a load intensity of q at the surface, the vertical stress at any depth is equal to
   (a) q
   (b) 0.5q
   (c) Zero
   (d) Infinity   Ans: (a)
4. For a strip of width B subjected to a load intensity of q at the surface, the pressure bulb of intensity 0.2q extends to a depth of
   (a) 3B
   (b) 6B
   (c) 1.5B
   (d) B   Ans: (a)
5. Newmark's influence chart can be used for the determination of vertical stress under
   (a) Circular loaded area only
   (b) Rectangular loaded area only
   (c) Strip load only
   (d) Any shape of loaded area   Ans: (d)
6. Stresses obtained from Boussinesq's theory are considered reasonably satisfactory in foundation engineering because
   (a) They represent stress distribution in inhomogeneous soils below loaded area
   (b) They account for an isotropy of soil property
   (c) They give due regard to plastic behaviour of soils, particularly for settlement analysis
   (d) They consider elastic soil medium and the intensity of allowable stresses below foundations in most cases are quite small and justify elastic solutions   Ans: (d)
7. A concentrated load of 1000 kN acts vertically at a point on the soil surface. According to Boussinesq's equation the ratio of the vertical stresses at depths of 3m and 5m is
   (a) 0.35
   (b) 0.70
   (c) 1.75
   (d) 2.78   Ans: (d)
8. A load of 2000 kN is uniformly distributed over an area of 3m×2m. The average vertical stress at a depth of 2m using 2:1 distribution is
   (a) 160 kN/m^2
   (b) 100 kN/m^2

(c) 48 kN/m^2

(d) 37 kN/m^2 Ans: (b)

9. Vertical stress on a vertical line at a constant radial distance from the axis of a vertical load

(a) Is same at all depths

(b) Increases with depth

(c) First increases, attains a maximum value and then decreases

(d) First decreases, attains a minimum value and then increases   Ans: (c)

10. The intensity of vertical pressure directly below a concentrated load of $3/2\pi$ tonnes at a depth of $3/2\pi$ metres is given by

(a) 1 t/m^2

(b) ½ t/m^2

(c) 3/2 t/m^2

(d) $(3/2\pi)^{3/2}$ t/m^2 Ans: (a)