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CIVIL TEST PAPER (13-04-2017)

- The I_T of clayey soil is given by
 - I_P / I_F
 - I_L / I_P
 - I_L / I_P
 - I_P / I_L
- If the consistency index of soil is equal to unity, it is at
 - Liquid limit
 - Plastic limit
 - Shrinkage limit
 - None of the above
- A soil has bulk density = 17.6 KN/m^2 and water content = 10%. If the void ratio remains constant then the bulk density for water content of 20% will be
 - 16.13 KN/m^2
 - 19.20
 - 19.36
 - 17.6
- A soil sample has $W_L = 45\%$, $W_P = 25\%$, $W_S = 14\%$ for a natural water content of 30% the liquidity index of the soil
 - 75%
 - 80%
 - 25%
 - None of the above
- A fully saturated soil has a water content of 200%. If $G=2.6$ the void ratio is
 - 1.3
 - 2.6
 - 5.2
 - 8.4
- For determination of water content the soil sample is heated for a period of 24 hr temperature of
 - 100°C
 - $110 \pm 10^\circ \text{C}$
 - $100 \pm 10^\circ \text{C}$
 - $>120^\circ \text{C}$
- The submerged unit W_t , for completely saturated soil is given by
 - $(G + e) r_w / 1 + e$
 - $(1 + e) r_w / 1 + e$
 - $(G - 1) r_w / 1 + e$
 - $(1 - e) r_w / G + e$
- The coefficient of curvature is defined as
 - $D_{30} / D_{60} * D_{10}$
 - $D_{30}^2 / D_{60} * D_{10}$
 - $D_{60}^2 / D_{30} * D_{10}$
 - $D_{30}^2 / D_{60} * D_{10}$
- To determine liquid limit in the flow curve the water content is plotted on
 - X – axis
 - Y – axis
 - Any axis
 - none of the above
- As per soil classification clayey sand is denoted by
 - SW
 - SC
 - SM
 - SP
- The vehicle used in bronze paints is usually
 - linseed oil
 - naptha
 - water
 - nitro-cellulose lacquer
- The bitumen paints are used for providing _____ surface. (Fill in the blank)
- Snowcret is an oil paint.
 - True
 - False
- Which of the following paints is highly resistant to fire?
 - Cement paint
 - Asbestos paint
 - Aluminium paint
 - Enamel paint
- Distemper is used on
 - Brick walls
 - Concrete surfaces
 - (a) &(b)
 - None of above
- The dry process of mixing is usually employed in the manufacture of Portland cement when the raw material is
 - blast furnace slag
 - chalk
 - clay
 - all of these
- The clinker is formed at a temperature of
 - 500°C
 - 1000°C
 - 1200°C
 - 1500°C
- Gypsum is added in the manufacture of Portland cement
 - while mixing the raw materials
 - during burning in the rotary kiln
 - at the beginning of grinding the clinker
 - at the end of grinding the clinker into powder
- The compound responsible for the initial setting of cement, is
 - tri-calcium silicate
 - di-calcium silicate
 - tri-calcium aluminate
 - all of these
- A good quality cement should have higher percentage of
 - silica
 - free lime
 - di-calcium silicate

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- d) tri-calcium silicate
21. Effective length of a weld is equal to
- Overall length – weld size
 - Overall length – throat thickness
 - Overall length – 2 * weld size
 - Overall length – 2 * throat size
22. Size of a right angled fillet weld is given by
- 0.707 * throat thickness
 - 0.414 * throat thickness
 - 2.0 * throat thickness
 - throat thickness
23. The effective length of a fillet weld designed to transmit axial load shall not be less than
- 2 * size of weld
 - 4 * size of weld
 - 6 * size of weld
 - 10 * size of weld
24. Size of fillet weld with unequal legs is equal to
- Smaller leg length
 - Longer leg length
 - Throat thickness
 - Average of smaller and longer leg length
25. Weakness section in a fillet weld is
- Throat of the fillet
 - Smaller side
 - Side parallel to force
 - Side perpendicular to force
26. Newton's law of viscosity relates
- Intensity of pressure and rate of angular deformation
 - Shear stress and rate of angular deformation
 - Shear stress, viscosity and temperature
 - Viscosity and rate of angular deformation
27. Center of buoyancy always
- Coincides with the centre of gravity
 - Coincides with the centroid of the volume of fluid displaced
 - Remains above the centre of gravity
 - Remains below the centre of gravity
28. Workability of concrete is inversely proportional to
- Time of transit
 - Water cement ratio
 - The air in the mix
 - Size of aggregate
29. The relation between modulus of rupture (f_{cr}) and characteristic strength of concrete (f_{ck}) is given by
- (a) $f_{cr} = 0.35 \sqrt{f_{ck}}$ (b) $f_{cr} = 0.5 \sqrt{f_{ck}}$
(c) $f_{cr} = 0.7 \sqrt{f_{ck}}$ (d) $f_{cr} = 1.2 \sqrt{f_{ck}}$
30. Cross staff is an instrument used for
- Measuring approximate horizontal angles
 - Setting out right angles
 - Measuring bearing of the lines
 - None of the above
31. Select the incorrect statement
- The true meridians at different place are parallel to each other
 - The true meridians at any place is not variable
 - The true meridians converge to a point in northern and southern hemispheres
 - The maps prepared by national survey departments of any country are based on true meridians
32. Efficiency of a riveter joint is defined as the ratio of
- (a) load to rivet value
(b) strength of solid plate to strength of joint
(c) strength of a riveted joint to the strength of solid plate
(d) all the above
33. If P and d are pitch and gross diameter of rivets, the efficiency (n) of the riveted joint is given by
- (a) $\frac{P}{P+d}$ (b) $\frac{P}{P-d}$
(c) $\frac{P+d}{P}$ (d) $\frac{P-d}{P}$
34. Snap head rivet can also be termed as
- Button head
 - Round head
 - Both (a) and (b)
 - None
35. A tropical cyclone in the northern hemisphere is a zone of

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- a) Low pressure with clock wise wind
b) Low pressure with anti-clock wise win
c) High pressure with clock wise wind
d) High pressure with anti-clock wise wind
36. Orographic precipitation occurs due to air masses being lifted to attitudes by
- a) A frontal action
b) The density of difference of air masses
c) The presence of mountain barriers
d) Extra tropical cyclone
37. The stopping sight distance depends upon
- a) Total reaction time of drive
b) Speed of vehicle
c) Efficiency of brakes
d) All of the above
38. When the path travelled along the road surface is more than the circumferential movement of the wheels due to rotation, then it results in
- a) Slipping
b) Skidding
c) Turning
d) Revolving
39. Which of the following causes a decrease in per capita consumption?
- a) Use of metering system
b) Good quality of water
c) Better standard of living of the people
d) Hotter climate
40. The distribution mains are designed for
- a) Maximum daily demand
b) Maximum hourly demand
c) Average daily demand
d) Maximum hourly demand on maximum day
41. 5, 27, 61, 122, 213, 340, 509. In this series one term in the number series is wrong. Find out the wrong term.
(a) 27 (b) 61 (c) 122 (d) 509
42. Which term comes next in the series: YEB, WFD, UHG, SKI,?
(a) QOL (b) QGL (c) TOL (d) QNL
43. Choose the missing terms out of the given alternatives Z, U, Q, ?, L
(a) I (b) K (c) M (d) N
44. A, B, B, D, C, F, D, H, E, ?, ?
(a) E, F (b) F, G (c) F, I (d) J, F (e) J, K
45. GH, JL, NQ, SW, YD, ?
(a) EJ (b) FJ (c) EL (d) FL
46. Which one of the following mining activities is the most labour – intensive?
(a) Coal (b) Manganese
(c) Iron ore (d) Copper
47. The term *bogey* is associated with
(a) Tennis (b) golf
(c) Baseball (d) Chess
48. Which of the following are special agencies of the UNO?
1. WHO 2. OPEC
3. IMF 4. FAO
Choose the correct answer from the codes given below.
(a) 1 and 2 (b) 2 and 3
(c) 1, 3 and 4 (d) 2, 3 and 4
49. 'Manesar lake' is located in
(a) J & K (b) Himachal Pradesh
(c) Punjab (d) Uttar Pradesh
50. The largest source of Foreign Direct Investment in India is
(a) Germany (b) Japan
(c) Mauritius (d) Italy