



# SSC JE MAINS 2019

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**Q ) According to IS classification, the range of silt size particles is-**

**[KPSC AE 2020]**

**A: 4.75 mm to 2.00 mm**

**B: 2.00 mm to 0.425 mm**

**C: 0.425 mm to 0.075 mm**

**D: 0.075 mm to 0.002 mm**

**Q ) Soil classification chart was derived by:**

**[UPPSC STATE ENG. A.E. 2004 (I)]**

**A: Terzaghi**

**B: Mayerhoff**

**C: Fellenius**

**D: Casagrande**

**Q ) A soil has liquid limit of 40% and lies above the A-line when plotted on plasticity chart. As per IS soil classification, the ground symbol of the soil is:**

**[Rajasthan JEN (degree)Shift-II 2016]**

**A: CH**

**B: MH**

**C: MI**

**D: CI**

**Q ) Which of the following are the uses of a particles size distribution curve for a coarse grained soils?**

**(i) For approximately assessing the coefficient of permeability**

**(ii) For approximately judging the compressibility of soil**

**(iii) To assess the susceptibility of soil to frost action**

**(iv) For assessing the mode of deposition of soil**

**[GPSC AE (CLASS 1 &2) 2019]**

**A: (i) and (ii)**

**B: (i), (ii) and (iii)**

**C: (i), (ii) and (iv)**

**D: (i), (ii), (iii), (iv)**

**Q ) The most essential criteria for proper soil classification using the unified soil classification or the AASHTO soil classification system are:**

**[HPPS POLY. LECT. 2016]**

**A: Water content and soil density**

**B: Atterberg limits and specific gravity**

**C: Grain-size distribution and water content v**

**D: Grain-size distribution and Atterberg limits**

**Q ) According to IS classification system, the soils can be classified into**

**[GPS AE MARCH 2018]**

**A: 18 groups**

**B: 15 groups**

**C: 3 groups**

**D: 7 groups**

**Q ) Capillary water in soils**

**[UKPSC AE 2012 PAPER-I]**

**A: Causes negative pore water pressure**

**B: Reduce effective pressure**

**C: Reduces bearing capacity**

**D: All the above are true**



**Q ) Due to rise in temperature, the viscosity and unit weight of the percolating fluid are reduced to 70% and 90% respectively. Other things being constant, the change in the coefficient of permeability will be**  
**[GPSC AE MARCH 2018 UK COMBINDE AE PAPER-I, 2012 / ESE 1996]**

**A: 20%**

**B: 28.6%**

**C: 63.0%**

**D: 77.8%**

**Q ) A sample of clay and sample of sand have the same specific gravity and void ratio. Their permeabilities would differ because**

**[BPSC AE 2019 PAPER (V) SECTION-I]**

**A: Their porosities would be different**

**B: Their degree of saturation would be different**

**C: Their densities would be different**

**D: The size ranges of their voids would be different**

**Q ) Consider the following statements:**

**The coefficient of permeability 'K' depends upon-**

- (i) Void ratio of the soil**
- (ii) Duration**
- (iii) Diameter of the soil grain**
- (iv) Shape of the particle**
- (v) [RPSC AE 2018 \ UPRVUNL AE 2015 \ ESE 2010]**

**Which of the above statement is correct?**

**A: (i), (ii) and (iii) and (iv)**

**B: (ii) & (iii) only**

**C: (i), (iii) & (iv) only**

**D: (iii) & (iv) only**

**Q ) Consider the following statements:**

- (i) Quicksand is a special variety of sand**
- (ii) Quicksand is not a material but a hydraulics conditions.**
- (iii) In nature, quicksand condition is observed usually in coarse silt or fine sand.**

**[GPSC AE CLASS (1 &2) PAPER – 2 2017]**

**Which of the above statements are correct?**

**A: (i), (ii) and (iii)**

**B: (i) and (ii)**

**C: (ii) and (iii)**

**D: (i) and (iii)**

**Q ) Consider the following statements:**

**(i) Organic matter increases the permeability of a soil**

**(ii) Entrapped air decreases the permeability of a soil**

**(iii) Which of these statement is/are correct?**

**(iv) [GPSC AE CLASS (1&2) PAPER-2 2017 / ESE 2007]**

**A: Only (i)**

**B: Only (ii)**

**C: Both (i) and (ii)**

**D: Neither (i) or (ii)**

**Q ) Radius of influence, R, can be related to draw down in a well, S, and coefficient of permeability, k, in m/s, as:**

**[WBPSA POLV LECT. 2019]**

**A:  $R = 3000 s \sqrt{k}$**

**B:  $R = 1000 S \sqrt{k}$**

**C:  $R = 3000 s \sqrt{k}$**

**D:  $R = 1000 \sqrt{S} \cdot k$**

**Q ) The dimension of the intrinsic permeability is**

**[BPSC AE AUG 2019 PAPER-VI]**

**A:  $L^2$**

**B:  $LT^{-1}$**

**C:  $L^3$**

**D: Dimensionless**

**Q ) The porosity and specific gravity of solid of a sand lying below a masonry dam as 40% and 2,67 respectively. The maximum permissible upward gradient with a factor of safety 4 is**

**[WBPSA AE 2014]**

**A: 0.25**

**B: 0.5**

**C: 1.0**

**D: 4.0**



**Q ) During seepage through an earth mass, the direction of seepage is**

**[BPSC AE 2019 PAPER (V) SECTION-I]**

**A: Parallel to equipotential lines**

**B: Perpendicular to the stream lines**

**C: Perpendicular to the equipotential lines**

**D: Along the direction of gravity**

**Q ) The angle of internal friction of round-grained loose sand is about**

**[Gujrat PSC AE – II 2017]**

**A:  $5^{\circ}$  to  $25^{\circ}$**

**B:  $25^{\circ}$  to  $30^{\circ}$**

**C:  $30^{\circ}$  to  $35^{\circ}$**

**D:  $32^{\circ}$  to  $37^{\circ}$**

**Q ) The free fall of hammer for compaction of soil in standard proctor test is**

**[RPSC POLY. TECH LECT 2011]**

**A: 10.5 cm**

**B: 20.5 cm**

**C: 30.5 cm**

**D: 40.5 cm**

## Q ) Match the pair-

A. Compaction	(i) Expulsion of water
B. Swelling	(ii) Sudden volume decrease
C. Consolidation	(iii) Increase in volume
D. Collapse	(iv) Expulsion of air

### [MPSC 2015 PAPER-II NAINS]

**A: (iii), (i), (ii) (iv)**

**B: (iii), (ii), (iv), (i)**

**C: (iv), (v), (ii), (iii)**

**D: (iv), (i), (ii), (iii)**

**Q ) Match List-I (test) with List-II (property) and select the correct answer using the codes given below the lists:**

List-I (test)	List-II (property)
A. Proctor test	1. Grain size analysis
B. Vane test	2. Shear strength
C. Penetration test	3. Bearing capacity
D. Hydrometer test	4. Compaction

**[RPSC AE 2018 / HPPSC 2016-III]**

**Codes:**

**A: 2, 4, 1, 3**

**B: 4, 2, 1, 3**

**C: 4, 2, 3, 1**

**D: 2, 4, 3, 1**

**Q ) Sheep foot rollers are used for:**

**[GPSC AE CLASS (1&2) PAPER – 2017]**

**A: Compacting soil in confined areas and at corners**

**B: Compacting road and railway embankments of sandy soils**

**C: Densifying sandy soil over large area and to large depth**

**D: Compacting clayey soil fills**

**Q ) Trenching machines can not be used for:**

**[Nagaland PSC CTSE 2017 PAPER-I]**

**A: Rocks**

**B: Hard clay**

**C: Muddy clay**

**D: Loose material**

**Q ) Bottom-dump wagons are suitable for handling which of the following?**

**[Nagaland PSC CTSE 2017 PAPER-I]**

**A: Wet sticky clay**

**B: Sand and gravel**

**C: Quarry rocks**

**D: Any type of material**



**Q ) Vibratory rollers are more useful for compacting which of the following?**

**[Nagaland PSC CTSE 2017 PAPER-I]**

**A: Sandy soils**

**B: Silty soils**

**C: Clayey soils**

**D: Mixed**

**Q ) Which is the mass of the hammer in modified protor test?**

**[OPSC AE PAPER –II 2019]**

**A: 2.5 kg**

**B: 3.93 kg**

**C: 4.89 kg**

**D: 6.1 kg**

**Q ) Which is not a method of obtaining flownet?**

**[UPPSC AE 12-04-2016 PAPER –I]**

**A: Electrical flow analogy**

**B: Capillary flow analogy**

**C: Sand model**

**D: Flow model**

**Q ) What is the water that forms hydration shells preferably below 200 molecule thick around the soil grains called?**

**[UPPCL AE 2015]**

**What that forms a hydration shell around soil grains is known as.....**

**[SJVNL ET 2019]**

**A: Structural water**

**B: Pore water**

**C: Infiltrated water**

**D: Solvate water**

**Q ) Flow net is an important tool in analysis in ....**

**Irrotational flow problems**

**[SJVNL ET 2019]**

**A: 3 dimensional**

**B: 1 dimensional**

**C: 5 dimensional**

**D: 2 dimensional**

**Q ) A soil strata when analysed shows capillary water. A possible effect of it would be:**

**[UPPCL AE 2015]**

**A: Negative pore water pressure and increased bearing capacity**

**B: Reduced bearing capacity**

**C: Reduced effective pressure**

**D: Negative pore water pressure**

**Q ) The standard proctor compaction curve of a clay is depicted in the figure. Point A, B and c correspond to three compaction states of the soils, which fall on this curve. For which point(s) is the coefficient of permeability minimum?**

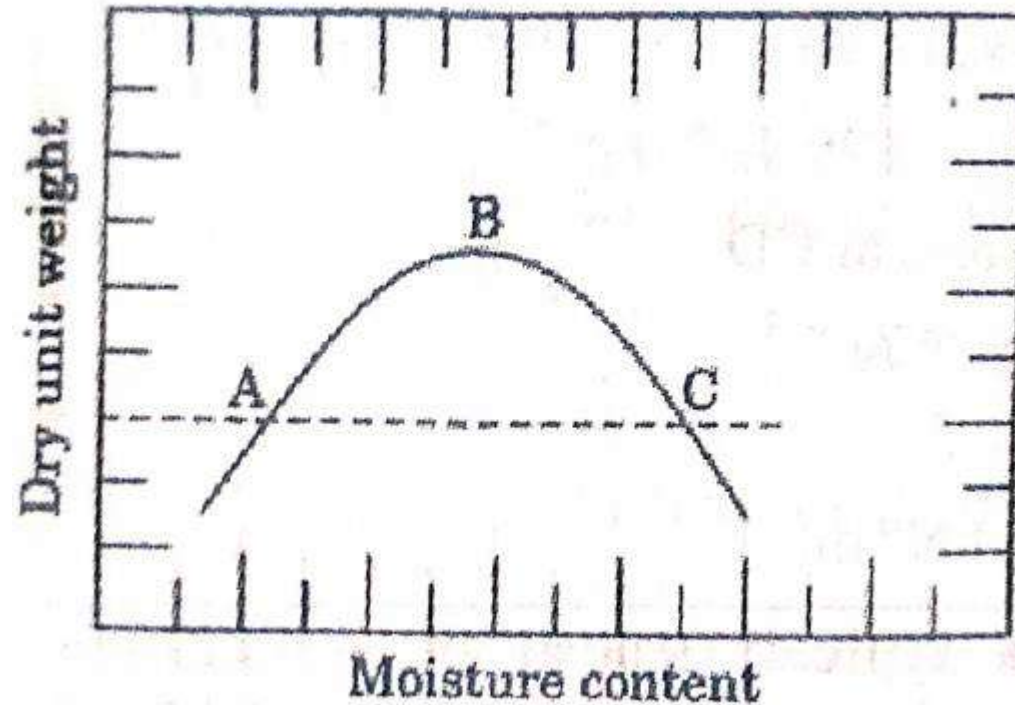
**[GPSC AE JANUARY 2018]**

**A: A and C**

**B: A**

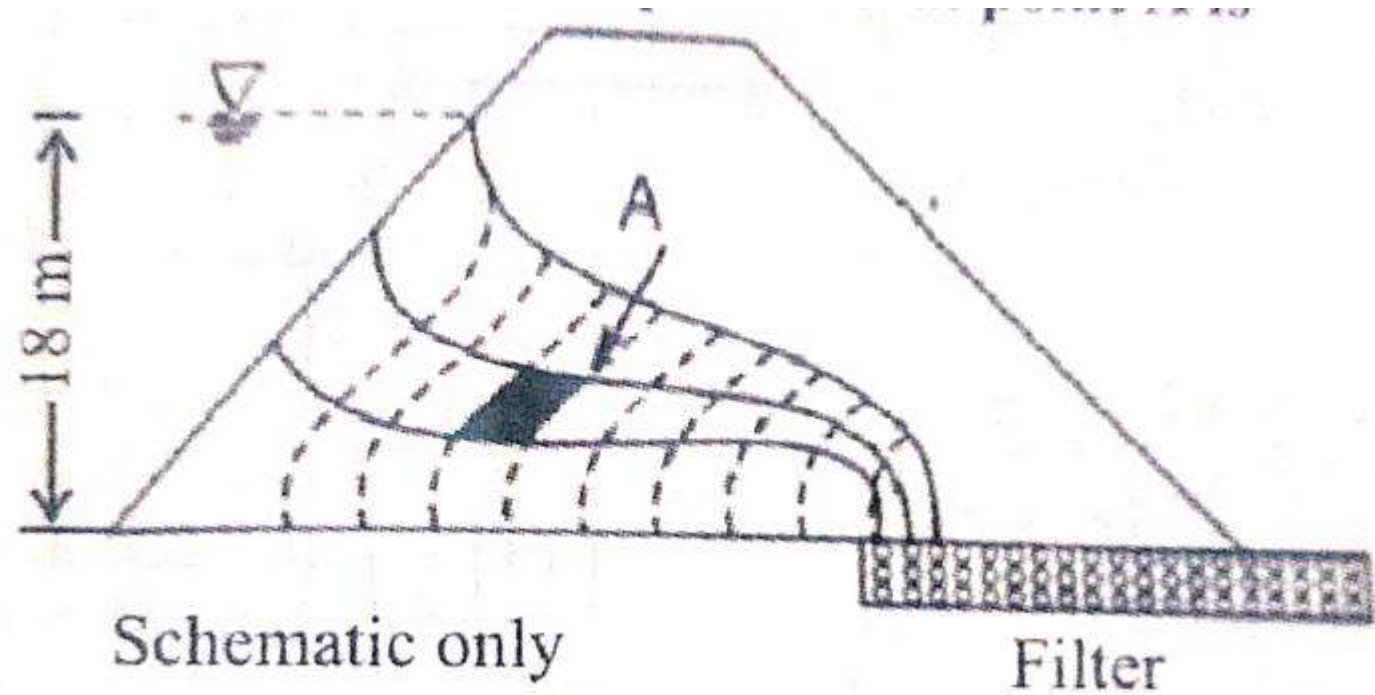
**C: B**

**D: C**



**Q ) In the schematic flow net shown in the give figure,  
the hydraulic potential at point A is  
[UPRVUNL AE 2015 /ESE 1996]**

- A: 5 m of water**
- B: 12 m of water**
- C: 15 m of water**
- D: 25 m of water**

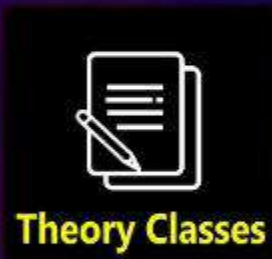






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