

**1. Lacustrine soils are soils**

- (a) transported' by river and streams
- (b) trasnported by glaciers
- (c) deposited in sea beds
- (d) deposited in lake beds

**2. Acidic soils are reclaimed by**

- (a) leaching of the soil
- (b) using limestone as a soil amendment
- (c) using gypsum as a soil amendment
- (d) provision of drainage

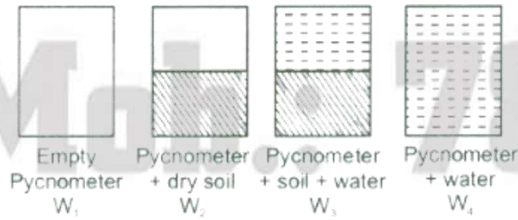
**3. The collapsible soil is associated with**

- (a) Dune sands
- (b) Laterite soils
- (c) Loess
- (d) Black cotton soils

**04. The liquid limit and plastic limit of soil sample P are 65% and 29% respectively. The percentage of the soil fraction with grain size finer than 0.002 mm is 24. The activity ratio of the soil sample is**

- (a) 0.50
- (b) 1.00
- (c) 1.50
- (d) 2.00

05. The given figure indicates the weights of different pycnometers :



The specific gravity of the soils is given by

- A.  $\frac{W_2}{W_4 - W_2}$       B.  $\frac{W_2 - W_1}{(W_3 - W_4)(W_2 - W_1)}$
- C.  $\frac{W_2}{(W_3 - W_4)}$       D.  $\frac{W_2 - W_1}{(W_2 - W_1) - (W_3 - W_4)}$

06. A soil has liquid limit of 60% plastic limit of 35% and shrinkage limit of 20% and it has a natural moisture content of 50%. The liquidity index of soil is

- (a) 1.5  
(b) 1.25  
(c) 0.6  
(d) 0.4

YouTube CHANNEL

EVEREXAM

07. The moisture content of a clayey soil is gradually decreased from a large value. What will be the correct sequence of the occurrence of the following limits?

1. Shrinkage limit
2. Plastic limit.
3. Liquid limit.

Select the correct answer from the codes given below:

- (a) 1, 2, 3
- (b) 1, 3, 2
- (c) 3, 2, 1
- (d) 3, 1, 2

08. Which one of the following tests CANNOT be done without undisturbed sampling?

- (a) Shear strength of sand
- (b) Shear strength of clay
- (c) Determination of compaction parameters
- (d) Atterberg limits

09. A clayey soil has liquid limit =  $w_L$  ; plastic limit =  $W_p$  and natural moisture content =  $w$ . The consistency index of the soil is given by

- A.  $\frac{W_L - W}{W_L - W_p}$
- B.  $\frac{W_L - W_p}{W_L - W}$
- C.  $\frac{W_p - W}{W_L - W_p}$
- D.  $\frac{W_L - W_p}{W_p - W}$

10. If an unconfined compressive strength of 4 kg/cm in the natural state of clay reduced by

- A. 1
- B. 2
- C. 4
- D. 8

11. Which one of the following would contain water with the maximum amount of turbidity?

- (a) Lakes
- (b) Oceans
- (c) Rivers
- (d) Wells

12. A commonly used handpump is the

- (a) Centrifugal pump
- (b) Reciprocating pump
- (c) Rotary pump
- (d) Axial flow pump

13. Reciprocating pumps are suitable for

- (a) Low discharge and high head
- (b) High discharge and low head
- (c) Low discharge and low head
- (d) High discharge and high head

14. On which of the following factors, does the 17. Population growth in a town normally depend?

- |                          |                    |
|--------------------------|--------------------|
| 1. Birth and death rates | 2. Migrations      |
| 3. Probabilistic growth  | 4. Logistic growth |

Select the correct answer using the codes given below:

- (a) 1 and 4
- (b) 1 and 2
- (c) 1,2 and 3
- (d) 2 and 3

15. For water supply to a medium town, what is the daily variation factor?

- (a) 1.5
- (b) 2.5
- (c) 3
- (d) 3.5

16. If the total hardness and alkalinity of a sample of water are 300 mg/l and 100 mg/l ( $\text{CaCO}_3$  scale) respectively, then its carbonate and non-carbonate hardness (in units of mg/l) will be respectively.

- (a) 100 and 200
- (b) 400 and 300
- (c) 100 and 400
- (d) 400 and zero

YouTube CHANNEL

EVEREXAM



17. Electrical conductivity (EC) of water and total dissolved solids (TDS) are interrelated. The value of EC will

- (a) Decrease with increase in TDS
- (b) Increase with increase in TDS
- (c) Decrease initially and then increase with increase in TDS
- (d) Increase initially and then decrease with increase in TDS

18. Match List-I (Parameters) with List-II (Permissible concentration in drinking water) and select the correct answer.

List - I	List -II
A. Hardness	1. 0.1 mg / l
B. Nitrate concentration	2. 0.5 mg/l
C. Iron concentration	3. 200 mg / l
D. Fluoride concentration	4. 45 mg / l

Codes :

- a. A – 3, B – 4, C – 2, D – 1
- b. A – 3, B – 4, C – 2, D – 1
- c. A – 3, B – 4, C – 2, D – 1
- d. A – 3, B – 4, C – 2, D – 1

YouTube CHANNEL

EVEREXAM

**19. Which of the following is/are the characteristic(s) of coliform organism?**

1. Bacillus
2. Gram-negative
3. Ferments lactose.
4. Spore-forming.

**Select the correct answer using the codes given below:**

- (a) 1 alone
- (b) 1, 2 and 4
- (c) 1, 2 and 3
- (d) 2, 3 and 4

**20. Match List-I (Water quality) with List-II (Method of determination) and select the correct answer:**

**List – I**

- A. Hardness
- B. Chlorine
- C. D. O
- D. Chloride

**Codes :**

- a. A – 2, B – 3, C – 1, D – 4
- b. A – 2, B – 4, C – 1, D – 3
- c. A – 1, B – 3, C – 2, D – 4
- d. A – 1, B – 4, C – 2, D – 3

**YouTube CHANNEL**

**EVEREXAM**

**21. Consider the following surveys:**

1. Reconnaissance survey
2. Preliminary survey
3. Traffic survey
4. Location survey.

The correct sequence in which these surveys are conducted before the alignment of a track is finalised, is

- (a) 1, 3, 2, 4
- (b) 1, 3, 4, 2
- (c) 3, 1, 4, 2
- (d) 3, 1, 2, 4

**22. A scale of 1 inch = 50 ft. is mentioned on an old map. What is the corresponding equivalent scale?**

- (a) 1 cm = 5 m
- (b) 1 cm = 6 m
- (c) 1 cm = 10 m
- (d) 1 cm = 12 m

**23. Consider the following statements: The general principles of surveying are?**

1. To work from part to whole
2. To locate a new station by measurements from at least two fixed reference points already established and/or identifiable.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2



24. A 30 m metric chain is found to be 0.1 m too short throughout the measurement. If the distance measured is recorded as 300 m, then the actual distance measured will be

- (a) 300.1 m
- (b) 301.0 m
- (c) 299.0 m
- (d) 310.0 m

25. Offsets are

- (a) lateral measurements made with respect to main survey lines
- (b) perpendiculars erected from chain lines
- (c) taken to avoid unnecessary walking between stations
- (d) Measurements which are not made at right angles to the chain line

YouTube CHANNEL

EVEREXAM

26. Match List-I with List-II and select the correct answer using the codes given below the lists:

- | List – I              | List – II            |
|-----------------------|----------------------|
| A. Correction for sag | 1. Tacheometer       |
| B. Least Count 30'    | 2. Aerial photograph |
| C. Over lap           | 3. Base line         |
| D. Additive constant  | 4. Prismatic compass |

Codes

- A. A – 4, B – 3, C – 2, D – 1
- B. A – 3, B – 4, C – 2, D – 1
- C. A – 1, B – 2, C – 3, D – 4
- D. A – 3, B – 4, C – 1, D – 2

27. What is the angle between two plane mirrors of an optical square ?

- (a)  $30^\circ$
- (b)  $60^\circ$
- (c)  $45^\circ$
- (d)  $90^\circ$

28. What is the slope correction for a length of 30.0 m along a gradient of 1 in 20 ?

- (a) 3.75 cm
- (b) 0.35 cm
- (c) 37.5 cm
- (d) 0.0375 cm

YouTube CHANNEL

EVEREXAM

29. If  $L$  is the length of the chain,  $W$  is the weight of the chain and  $T$  is the tension, the sag correction for the chain line is

- A.  $W^2L^2 / 24T^3$
- B.  $W^2L / 24T^2$
- C.  $W^2L^2 / 24T^2$
- D.  $W^2L^3 / 24T^3$

30. In an inclined terrain, if the elevation difference between the two ends of a line is  $h$  and the inclined length of the line is  $L$ , the correction for slope is

- A.  $H^2 / L^2$
- B.  $H^2 / 2L^2$
- C.  $2H^2 / L^2$
- D.  $H^2 / 2L$

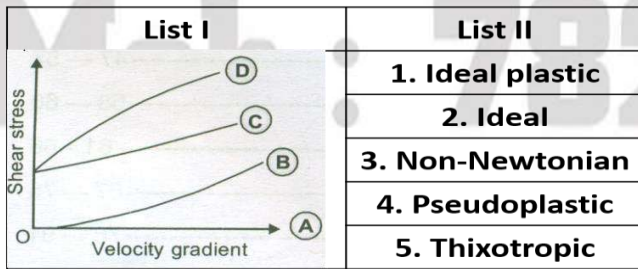
31. Which one of the following pressure units represents the LEAST pressure ?

- a. Millibar
- b. Mm of mercury
- c.  $N/mm^2$
- d.  $Kgf/cm^2$

YouTube CHANNEL

EVEREXAM

32. Match List I (curves labelled A, B, C and D in figure) with List II (types of fluid) and select the correct answer:



A B C D

- a. 2 3 1 5  
b. 3 2 1 5  
c. 4 2 1 1  
d. 2 3 5 1

33. Match List-1 with List-II and select the correct answer:

List – I	List – II
A. Concentrated sugar solution	1. Dilatant fluid
B. Sewage sludge	2. Bingham plastic fluid
C. Blood	3. Pseudoplastic fluid
D. Air	4. Newtonian fluid

A B C D

- a. 1 2 3 4  
b. 1 2 4 3  
c. 2 1 3 4  
d. 2 1 4 3

YouTube CHANNEL

EVEREXAM

**34. Which one of the following statements is correct ?**

- a. Dynamic viscosity of water is nearly 50 times that of air
- b. Kinematic viscosity of water is 30 times that of air
- c. Water in soil is able to rise a considerable distance above the groundwater table due to viscosity
- d. Vapour pressure of a liquid is inversely proportional to the temperature

**35. Which of the following fluids can be classified as non-newtonian**

- 1. Kerosene oil
- 2. Diesel oil
- 3. Human blood
- 4. Toothpaste
- 5. Water

**Select the correct answer using the code given below**

- a. 1 and 2
- b. 3 and 4
- c. 2 and 5
- d. 1 and 5

**YouTube CHANNEL**

**EVEREXAM**



36. Which one of the following expresses the height of rise or fall of a liquid in a capillary tube

- a.  $\frac{4wd}{\sigma \cos \alpha}$
- b.  $\frac{\sigma \cos \alpha}{4wa}$
- c.  $\frac{4\sigma \cos \alpha}{Wd}$
- d.  $\frac{Wd}{4\sigma \cos \alpha}$

37. Which one of the following statements is correct

- a. Local atmospheric pressure is always lesser than standard atmospheric pressure
- b. Local atmospheric depends upon the elevation of the locality only
- c. Standard atmospheric pressure is at sea level
- d. A barometer reads the difference between local and standard atmospheric pressure.

38. Poise has the unit of

- a. Dyne-cm/s<sup>2</sup>
- b. Dyne-cm/s
- c. Dyne-s/m
- d. Dyne-s/cm<sup>2</sup>

YouTube CHANNEL

EVEREXAM

39. Which of the following statements is correct

- a. Dynamic viscosity is the property of a fluid which is not in motion
- b. Surface energy is a fluid property giving rise to the phenomenon of capillarity in water
- c. Capitation results from the action of very high pressure
- d. Real fluids have lower viscosity than ideal fluids

40. The surface tension in a soap bubble of 50 mm diameter with its inside pressure being  $2.5 \text{ N/m}^2$  above the atmospheric pressure is

- a. 0.4
- b. 0.6
- c. 0.95
- d. 1.20

YouTube CHANNEL

EVEREXAM