Assignment 1

The due date for submitting this assignment has passed. Due on 2016-02-09, 23:55 IST.

Submitted assignment

Tick true or False against the following statements

1) Chelation is a chemical weathering process

   True
   False

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   True

2) Limestone can turn into a metamorphic rock under suitable conditions

   True
   False

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   True

3) Argillite is a sedimentary rock

   True
   False

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   True

4) Cementation is a process associated with sedimentary rock formation

   True
   False

   No, the answer is incorrect.
   Score: 0
   Accepted Answers:
   True
5) The round shape of sand and gravels can mostly be attributed to sediment transportation by **air**

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

6) Alluvial deposits may contain all soils from clay to gravel

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

7) Alluvial deposits are mostly common in the Gangetic Plains

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
True

8) It is very difficult to construct a building in black cotton soil

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
True

9) The thickness deposits in alluvial soils are mostly uniform in nature

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

10) Marine soils form very stable slopes

- True
- False

No, the answer is incorrect.
Score: 0
Accepted Answers:
False

11) Soil is a two phase material

- True
- False

No, the answer is incorrect.
Score: 0
<table>
<thead>
<tr>
<th>Question</th>
<th>Accepted Answers</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>12) Specific Gravity of soils has unit of gm/cc</td>
<td>False</td>
<td>1 point</td>
</tr>
<tr>
<td>13) Water content is actually a volumetric quantity.</td>
<td>False</td>
<td>1 point</td>
</tr>
<tr>
<td>14) Void ratio of soils can be greater than one.</td>
<td>False</td>
<td>1 point</td>
</tr>
<tr>
<td>15) Sieve Analysis is possible for silts only</td>
<td>True</td>
<td>1 point</td>
</tr>
<tr>
<td>16) Hydrometer Analysis is based on average velocity of a falling spherical particle in fluids.</td>
<td>False</td>
<td>1 point</td>
</tr>
<tr>
<td>17) Dispersion agent correction in Hydrometer Analysis is additive</td>
<td>False</td>
<td>1 point</td>
</tr>
<tr>
<td>18) Theoretically, a soil at shrinkage limit is said to be completely saturated</td>
<td>False</td>
<td>1 point</td>
</tr>
</tbody>
</table>
No, the answer is incorrect.
Score: 0
Accepted Answers:

19) Relative Density of soils is unit less
   - True
   - False

No, the answer is incorrect.
Score: 0
Accepted Answers:

20) Relative density is specifically used for clayey type of soils
   - True
   - False

No, the answer is incorrect.
Score: 0
Accepted Answers:

Tick the correct options (one or more options may be correct)

21) Detrital sedimentary rocks are formed by
   - Chemical disintegration of rocks
   - Accumulation of debris from plants and animals
   - Filling spaces between particles
   - Mineral constituents in a rock solution turns supersaturated

No, the answer is incorrect.
Score: 0
Accepted Answers:

22) Mechanical weathering is caused by
   - Roots extending deep in rock cracks
   - Expansion and contraction of rocks due to continuous gain and loss of heat
   - Freezing or thawing of water in rock joints
   - Accumulation of salts in rock faults

No, the answer is incorrect.
Score: 0
Accepted Answers:

23) Splash erosion, a type of erosion is caused by
   - Wind impact on unprotected soil surface
   - Rainfall on unprotected soil surface
   - Snowfall on unprotected soil surface
   - Floods on unprotected soil surface

No, the answer is incorrect.
Score: 0
Accepted Answers:
Rainfall on unprotected soil surface

24) Traction, a process of sediment transportation is possible for

- Small particles only
- Medium and Large particles
- All particles
- Large particles only

No, the answer is incorrect.
Score: 0
Accepted Answers:
Large particles only

25) Transportation of sediments uphill can mostly be attributed to

- Wind
- Water
- Ice
- Gravity

No, the answer is incorrect.
Score: 0
Accepted Answers:
Wind

26) Western Ghats of India contain mostly

- Alluvial deposits
- Lateritic deposits
- Marine deposits
- Black Cotton Soils

No, the answer is incorrect.
Score: 0
Accepted Answers:
Marine deposits

27) An organically deposited sedimentary rock is

- Coal
- Sandstone
- Limestone
- Shale

No, the answer is incorrect.
Score: 0
Accepted Answers:
Coal
Limestone

28) Varved clays consist of alternate layers of clay and silt due to

- Chemical weathering over multiple seasons
- Chemical reaction within the soil
- Desiccation in intervening periods
- Cyclical deposition in alternate seasons

No, the answer is incorrect.
Score: 0
Accepted Answers:
Cyclical deposition in alternate seasons

29) Light rainfall aids in a weathering process mainly known as

- Splash erosion
Read the paragraphs and answer the following questions

A) A soil report has to be made for two field deposits near Raipur, Chattisgarh. The GSD (Grain size distribution) and Hydrometer Analysis for the first field deposit are performed in the lab. The weight of material in each sieve and their corresponding no. are listed below. Total weight taken for analysis is 500 gm.

- 2 mm – 50.56 gm
- 1 mm – 65.45 gm
- 600 microns – 0.34 gm
- 425 microns – 0.23 gm
- 212 microns – 48.73 gm
- 150 microns – 170.99 gm
- 75 microns – 130.45 gm

31) What is the percentage of Gravels in the soil? 

- 10.112
- 0
- 19.202
- 0.1 

No, the answer is incorrect.
Score: 0
Accepted Answers: 0

32) The effective size of the soil grains is

- 0.575
- 0.2
- 0.469
- 0.085

No, the answer is incorrect.
Score: 0
Accepted Answers: 0.085

33) The Soil is a
### Uniformly graded soil
- Gap Graded soil
- Well Graded soil
- Can't say from the given data

**No, the answer is incorrect.**
**Score: 0**

**Accepted Answers:**
- Gap Graded soil

### 34 The Coefficient of uniformity for the soil is
- 2.532
- 1.394
- 2.25
- 3.472

**No, the answer is incorrect.**
**Score: 0**

**Accepted Answers:**
- 2.532

### B) Index properties performed on another soil deposit at a Raipur, Chattisgarh gave the following results. For Liquid Limit, the no. of blows and water content are presented below

<table>
<thead>
<tr>
<th>Water Content (%)</th>
<th>No. of Blows</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 – 27.5 %</td>
<td>16</td>
</tr>
<tr>
<td>21 – 22.8 %</td>
<td>21</td>
</tr>
<tr>
<td>23 – 21 %</td>
<td>23</td>
</tr>
<tr>
<td>29 – 16.6%</td>
<td>29</td>
</tr>
</tbody>
</table>

Plastic limit performed on four soil threads of different diameters are given below. 3.18 mm – 12.7% 3.34 mm – 12.45% 4 mm – 12.78% 2.57 mm – 12.34%

### 35 The Liquid Limit for the soil is
- 22.8 %
- 19.68 %
- 17.84 %
- 15.67 %

**No, the answer is incorrect.**
**Score: 0**

**Accepted Answers:**
- 19.68 %

### 36 The Plastic limit for the soil is
- 12.575 %
- 12.5675 %
- 12.56 %
- Can't say from the given data

**No, the answer is incorrect.**
**Score: 0**

**Accepted Answers:**
- 12.575 %

### 37 The Plasticity Index for the soil is
- 4.23 %
- 0 %
- 10.25 %

**1 point**
7.105 %

No, the answer is incorrect.
Score: 0
Accepted Answers:
7.105 %

38] The soil is
- Highly Plastic
- Low Plastic
- Medium Plastic
- Non Plastic

No, the answer is incorrect.
Score: 0
Accepted Answers:
Low Plastic

39] Shrinkage limit for the soil is approximately
- Greater than 25 %
- Not more than 7 %
- Less than 12 %
- Can't say

No, the answer is incorrect.
Score: 0
Accepted Answers:
Less than 12 %