Assignment 2

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

1) Identify the TRUE statement with regard to the aggregate quarrying process
   - In impact crusher, the aggregates get broken through rolling mechanism of two rollers
   - Both roller crusher and jaw crusher are types of secondary crusher
   - Primary crusher is used to reduce large-sized aggregates such as boulders to small-sized coarse aggregates
   - Secondary crusher is used to reduce aggregates to sizes lower than 4.75 microns

   No, the answer is incorrect.

   Score: 0
   Accepted Answers:
   - Primary crusher is used to reduce large-sized aggregates such as boulders to small-sized coarse aggregates

2) Identify the TRUE statement with regard to the shape of coarse aggregate used in concrete
   - Rounded aggregates have higher surface to volume ratio and require higher amount of paste to fully coat the aggregate surfaces as compared to crushed aggregates
   - Flat and elongated aggregates are preferred from the standpoint of strength
   - Angular aggregates are crushed rocks having more or less defined edges
   - Flaky aggregates have higher thickness as compared to their other two dimensions

   No, the answer is incorrect.

   Score: 0
   Accepted Answers:
   - Angular aggregates are crushed rocks having more or less defined edges

3) Identify the TRUE statement with regard to the size and gradation of aggregates used in concrete
   - According to IS 456:2000, the nominal maximum size of aggregates is usually taken as 5 mm less than the maximum size of aggregates in a given aggregate sample
   - IS specifications do not allow combined gradation of coarse and fine aggregates to be used in concrete
   - Using larger maximum size of aggregates results in increased volume of voids in the system
   - Using large-sized aggregates affect the workability of concrete

   No, the answer is incorrect.

   Score: 0
   Accepted Answers:
   - Using large-sized aggregates affect the workability of concrete

4) Identify the FALSE statement with regard to the gradation of aggregates used in concrete
   - According to IS 383, fine aggregates conforming to Zone IV should not be used in reinforced concrete
   - According to IS 383, Zone II sand has higher fineness modulus than Zone III sand
   - Two aggregates samples with different grading curves can have same values of fineness modulus
   - According to IS 2386, 5% tolerance in the variability of gradation is acceptable on all the IS designated sieves

   No, the answer is incorrect.

   Score: 0
   Accepted Answers:
   - According to IS 2386, 5% tolerance in the variability of gradation is acceptable on all the IS designated sieves
Petrographic examination is one of the methods to determine the potential alkali aggregate reactivity of an aggregate sample. The percentage of volume of pores or porosity is usually very low.

No, the answer is incorrect.
Score: 0
Accepted Answers:
As per IS, the loss of weight of fine aggregates due to soaking in sodium sulfate solution in a soundness test should not exceed 18% for the aggregate to be used in reinforced concrete.

6) Identify the FALSE statement with regard to the mechanical properties of coarse aggregates.
- The mechanism of abrasion action in Devel's abrasion and Los Angeles abrasion drum are not different.
- In the Impact test for aggregates, higher weight of sample passing through 2.36 mm sieve at the end of the test indicates weaker aggregates.
- In Los Angeles abrasion test, aggregate gradation plays an important role in deciding the number of steel ball to be used as external charge.
- Aggregates can be used in concrete if their crushing value is higher than 30% and lower than 45%.

No, the answer is incorrect.
Score: 0
Accepted Answers:
The mechanism of abrasion action in Devel's abrasion and Los Angeles abrasion drum are not different.

7) Consider the data for sieve analysis of a coarse aggregate sample given in the following table.

<table>
<thead>
<tr>
<th>IS Sieve size</th>
<th>37.5 mm</th>
<th>25 mm</th>
<th>19 mm</th>
<th>12.5 mm</th>
<th>9.50 mm</th>
<th>4.75 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight retained (g)</td>
<td>0</td>
<td>50</td>
<td>750</td>
<td>2000</td>
<td>1200</td>
<td>1</td>
</tr>
</tbody>
</table>

Which of the following values correctly indicate the fineness modulus of the aggregate sample?

- 6.0
- 6.5
- 7.0
- 7.5

No, the answer is incorrect.
Score: 0
Accepted Answers: 7.0

8) Identify the TRUE statement with regard to the use of accelerators in concrete construction.
- Accelerators are used during colder environments to increase the setting time of concrete.
- The IS 9103 has the provision that 28 days compressive strength of the sample containing accelerators should not be less than 90% of the control sample.
- The dosage of accelerators should not exceed 4% by weight of cement used.
- The IS 9103 have the provision that after 28 days of water curing, the flexural strength of the sample containing accelerators should not be less than 90% of the control sample.

No, the answer is incorrect.
Score: 0
Accepted Answers: The IS 9103 have the provision that after 28 days of water curing, the flexural strength of the sample containing accelerators should not be less than 90% of the control sample.

9) Identify the FALSE statement with regard to use of air entrainment agents in concrete.
- Air entraining agent create unfrozen pore to relieve hydraulic pressure.
- Their effectiveness can be evaluated by measuring the air content of fresh concrete using pressure method, volumetric method and gravimetric method.
- The air content of air-entrained concrete mixture is in the range of 3.5-7% by volume.
- They have non-polar molecular chain with hydrophilic end.

No, the answer is incorrect.
Score: 0
Accepted Answers: They have non-polar molecular chain with hydrophilic end.

10) Identify the FALSE statement with regard to the use of water reducing admixtures (WRAs) in concrete.
- WRAs are added directly to the mix water during the mixing of ingredients in the production of concrete to avoid dispersion problems.
- WRAs can be used to reduce the cement content in a concrete mix and thereby help in the development of high strength concrete.
- WRAs contain salts of lignosulfonic acids or hydroxylated carboxylic acids.
- According to provisions in IS 9103, the, the 28 days compressive strength of concrete containing WRAs should be at least 25% more than the control concrete.

No, the answer is incorrect.
Score: 0
According to provisions in IS 9103, the 28 days compressive strength of concrete containing WRAs should be at least 25% more than the control concrete.