

Q 1 To make one cubic metre of 1 : 2 : 4 by volume of concrete, the volume of coarse aggregates required is

- (a) 0.95 m<sup>3</sup>
- (b) 0.85 m<sup>3</sup>
- (c) 0.75 m<sup>3</sup>
- (d) 0.65 m<sup>3</sup>

Q 2 The carbon content of structural steel is

- (a) Less than 0.1 %
- (b) 0.10 to 0.25%
- (c) 0.25 to 0.60%
- (d) 0.60 to 1.00%

Q 3 Batching refers to

- (a) Controlling the total quantity at each batch
- (b) Weighing accurately, the quantity of each material for a job before mixing
- (c) Controlling the quantity of each material into each batch
- (d) Adjusting water to be added in each batch according to the moisture content of the materials being mixed in the batch

Q 4 Consider the following strengths of concrete:

1. Cube strength
2. Cylinder strength
3. Split-tensile strength
4. Modulus of rupture

The correct sequence in increasing order of these strengths

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

Q 5 Consider the following statements:

Shrinkage of concrete depends upon the

1. Relative humidity of the atmosphere.
2. Passage of time.
3. Applied stress.

Which of these statements is/are correct?

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

Q 6 Consider the following statement:

The effect of air entrainment in concrete is to

1. Increase resistance to freezing and thawing.
2. Improve workability
3. Decrease strength

Which of these statements are correct?

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

Q 7 As per I.S. Code of Practice, concrete should be cured at

- (a) 5°C
- (b) 10°C
- (c) 27°C
- (d) 45°C

Q 8 The correct sequence of workability test(s) / method(s) in the

order of their application from low to high workability is

- (a) Slump test, Compacting factor test and Vee-bee consistometer.
- (b) Compacting factor test, Vee-bee consistometer and Slump test
- (c) Vee-bee consistometer, Slump test and Compacting factor test.
- (d) Vee-bee consistometer, Compacting factor test and Slump test

Q 9 Which one of the following statements is correct?

- (a) Bulking of sand always decreases with increase in the quantity of water
- (b) The quantity of water in ordinary concrete should be 5% by weight of cement and 25% by weight of aggregate
- (c) While mixing by weight, bulking effect of sand is not taken into account
- (d) sand is also known as standard sand

Q 10 The ratio of direct tensile strength to that of modulus of rupture of concrete is

- a. 0.25
- b. 0.5
- c. 0.75
- d. 1.0

Q 11 Assertion (A): Calcium chloride addition in concrete proves more effective in slow- hardening portland cement than in rapid-hardening cement

Reason (R): Calcium chloride acts as an effective accelerator thereby increasing rate of reaction.

Q 12 Which one of the following types of concrete is most suitable in extreme cold climates?

- (a) Air-entrained concrete
- (b) Ready mix concrete
- (c) Vacuum concrete
- (d) Coarse concrete

Q 13 Match List I (Workability test) with List II (Measurements) and select the correct answer:

List – I                      List – II

A-Slump test      1. 300 mm- 500 mm

B-Compacting      2. 75 mm to 125 mm  
factor

C-Vee bee test      3. 0.80 to 0.98

D-Flow test      4. Zero to 10 sec

Codes :

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

Q 14 Consider the following statements:

Curing of concrete by steam under pressure

1. Increases the compressive strength of concrete
2. Reduces the shear strength of concrete
3. Increases the speed of chemical reaction.

Select the correct answer using the codes given below:

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

(d) 3 alone

Q 15 Which one of the following aggregate gives maximum strength in concrete?

- (a) Rounded aggregate
- (b) Elongated aggregate
- (c) Flaky aggregate
- (d) Cubical aggregate

Q 16 Consider the following statements:

Ultrasonic pulse velocity test to measure the strength of concrete is

1. Used to measure the strength of wet concrete
2. Used to obtain estimate of concrete strength of finished concrete elements
3. A non-destructive test.

Of these statements

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

Q 17 In building construction, the place for providing damp proof course is at the

- (a) Basement level
- (b) Window sill level
- (c) Lintel level

(d) Roof level

Q 18 Consider the following statements:

Pozzolana used as an admixture in concrete has the following advantages

1. It improves workability with lesser amount of water
2. It increases heat of hydration and so sets the concrete quickly
3. It increases resistance to attack by salts and sulphates quickly
4. It leaches calcium hydroxide

Select the correct answer using the codes given below:

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

Q 19 Match List I (Admixture) with List II (Action in Concrete) and select the correct answer:

List – I	List – II
A-Calcium lignosulphonate	1. Anti bleeder
B-Aluminium powders	2. Retarder
C-Tartaric Acid	3. Air entrainer
D-Aluminium sulphate	4. Water reducer

Codes :

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

Q 20 Bleeding of concrete leads to which of the following?

1. Drying up of concrete surface
2. Formation of pores inside
3. Segregation of aggregate
4. Decrease in strength

Select the correct answer using the codes given below

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

