

- (b) What is meant by segregation of a concrete mix ?
- (c) What is meant by bleeding of concrete ?
- (d) What is meant by a lean mix ?
- (e) What is meant by a retarder ?
- (f) What is meant by a accelerator ?
- (g) What would you recommend as an accelerating, chloride-free admixture ?
- (h) State the influence of water/cement ratio and age on permeability of concrete.
- (i) Discuss the influence of silica content in aggregate on the alkali-silica reaction.

Roll No.

Total Pages : 04

J-21-0075

B. Tech. EXAMINATION, 2021

Semester VI (CBCS)

CONCRETE TECHNOLOGY

CE-606

Time : 2 Hours

Maximum Marks : 60

The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.

Note : Attempt *Four* questions in all, selecting *one* question from any of the Sections A, B, C and D.
Q. No. **9** is compulsory.

Section A

1. (a) Explain *two* properties of concrete in hardened stage.

(b) Draw the neat labelled sketch of slump cone with all dimensions. Suggest the slump values for the following situation :

- (i) Concrete used for road structures vibrated by power operated machine.
- (ii) Concrete used for road structures vibrated by hand operated machine. $7\frac{1}{2} \times 2 = 15$

2. What is meant by bleeding of concrete and how can it be controlled ? What is the effect of size and shape of aggregate in concrete ? What type of slump in a slump test is unsatisfactory ? **15**

Section B

3. State one property of the following admixtures with relevant application :

- (a) Super plasticizer
- (b) Accelerating admixture
- (c) Retarding admixture
- (d) Air entraining admixture. **15**

4. What is self-compacting concrete, and what are the advantages and disadvantages of using it ? Describe characteristics of self-compacting concrete in the fresh condition. How is the flowability of SCC measured ? **15**

Section C

- 5. Write *four* properties of Ready Mix Concrete. What is fibre reinforced concrete and what are its advantages ? **15**
- 6. Enlist the approaches generally considered for improvement of mechanical properties of concrete. What is ferrocement ? Describe briefly its properties and applications. **15**

Section D

- 7. Which tests are included in acceptance testing of Hardened Concrete ? Explain the basic principle on which Schmidt's rebound hammer works. What are its limitations ? **15**
- 8. What are partially destructive strength tests ? Enlist the partially destructive strength tests and describe briefly the concrete core tests. **15**

(Compulsory Question)

- 9. Attempt the following : **1½ × 10 = 15**
 - (a) What is the relation between cohesiveness and segregation ?