Scheme – G

Sample Question Paper:

Course Name : Diploma in Civil Engineering

Course Code: CE / CR / CS / CV

Semester : Fifth

17504

Subject Title : Concrete Technology

Marks : 100 **Time: 3 hours**

Instructions:

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Assume suitable data if necessary
5. Preferably, write the answers in sequential order

Q1. (A)Attempt THREE of the following **(12 Marks)**

a) State the compressive strength of 43 & 53 grade of cement as per IS for 7 days & 28 days.

b) Enlist three Baogue's compounds along with their properties.

c) What do you mean by Rapid hardening cement & state two conditions when it is used?

d) State the necessity of soundness test. Draw the labelled sketch of apparatus used for it.

Q1. (B)Attempt ONE of the following **(6 Marks)**

a) Giving expressions, define specific gravity, bulk density and % water absorption.

b) Giving sketches, enlist four types of coarse aggregates as per shape.

Q2. Attempt FOUR of the following **(16 Marks)**

a) Enlist max. Water cement ratio for four different grades of concrete as per I S 10262-1982.

b) Enlist four precautions to be taken during placing of concrete.

c) Define segregation and bleeding of concrete.

d) Giving diagram describe slump cone test.

e) Enlist two advantages of NDT and give example of each.

f) State basic principle of Rebound hammer test And ultrasonic pulse velocity test.

Q3.Attempt FOUR of the following **(16 Marks)**

a) Enlist four requirements of good course aggregate.

b) Give the method for determination of silt content of fine aggregate.

c) Give the method for determination of crushing value of coarse aggregate.

d) Describe the method for determination of bulk density of coarse aggregate.

e) State how compressive strength of concrete is determined by using Rebound hammer.

Q4. (A) Attempt THREE of the following (12 Marks)

a) State the methods used in compaction of concrete. Mention two situation where it is suitable.

b) Define curing of concrete and state its necessity.

c) Define batching in case of concrete and state types of batching.

d) Enlist four methods of waterproofing of concrete and state the materials used for each method.

Q4. (B) Attempt ONE of the following (6 Marks)

a) Enlist stages in concreting operations and state two precautions to be taken to avoide the wastage of material.

b) Enlist the types of joint in concrete and describe two of them.

Q5.Attempt FOUR of the following (16 Marks)

a) State four purposes of using admixtures in concrete.

b) State the four properties of fiber reinforced concrete.

c) What is the effect of cold weather and hot weather on concrete.

d) Describe with example how accelerating admixture differs from retarding admixture.

e) State any four chemical admixtures used in concrete and situations where it is used.

f) Compare on four points, ready mixed concrete with self-compacting concrete.

Q6. Attempt FOUR of the following (16 Marks)

a) Enlist four materials used for good formwork and state their limitations.

b) State methods of waterproofing and for which structural component the method is used.

c) Describe the use of super plasticizer in concreting.

d) State advantages and limitations of high performance concrete

e) Enlist the four situations in field where impermeability of concrete plays prime role than strength

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Sample Test Paper-I

Course Name : Diploma in Civil Engineering

Course Code: CE / CR / CS / CV

Semester : Fifth **17504**

Subject Title : Concrete Technology

Marks : 25 **Time: 1 hour**

Instructions:

1. All questions are compulsory
2. Illustrate your answers with neat sketches wherever necessary
3. Figures to the right indicate full marks
4. Preferably, write the answers in sequential order

Q1. Attempt THREE of the following **(9 Marks)**

a) Enlist the names of three chemical constituents of OPC and state its chemical formula.

b) State the three situations in the field where Rapid hardening cement is used.

c) Why grading of fine aggregate is necessary in preparation of concrete mix, give three reasons.

d) Write the meaning of "Bulking of sand" state its two effects in the process of concreting.

e) Write down two field application for each of following types of cement.

i) Low heat cement ii) Sulphate resisting cement. iii) White cement.

Q2. Attempt TWO of the following **(8 Marks)**

a) Enlist four effects of storage on properties of cement.

b) Following observations are obtained for a test on 1Kg of sand

Sieve size	4.75 mm	2.36 mm	1.18 mm	600 micron	300 micron	150 micron	75 micron
Weight Retained (grams)	20	115	270	307	194	70	24

Calculate fineness modulus of sand.

c) State two effects of each of the following on compressive strength of concrete.

i) Water absorption

ii) Size of coarse aggregate

Q3. Attempt TWO of the following **(8 Marks)**

a) How OPC is tested in the field, write four methods.

b) Write any four precautions to be taken while storing the cement.

c) Write four requirements of good coarse aggregates for concrete.

Scheme – G

Sample Test Paper-II

Course Name : Diploma in Civil Engineering

Course Code: CE / CR / CS / CV

Semester : Fifth **17504**

Subject Title : Concrete Technology

Marks : 25 **Time: 1 hour**

Instructions:

1 All questions are compulsory

2 Illustrate your answers with neat sketches wherever necessary

3 Figures to the right indicate full marks

4 Preferably, write the answers in sequential order

Q1. Attempt THREE of the following **(9 Marks)**

a) Define concrete and grade of concrete. Enlist two grades of concrete

b) Give three advantages and dis advantages of volume batching.

c) Define water cement ratio. State Duff Abraham's law for water cement ratio.

d) What do you mean by non-destructive testing. State two advantages of it .

e) Enlist three objectives of Mix design for concrete

Q2. Attempt TWO of the following **(8 Marks)**

a) Enlist four modes of transportation of concrete and state the mode which you will use for high rise building.

b) Define curing of concrete and state its necessity.

c) State four requirements of good form work for concrete.

Q3. Attempt TWO of the following **(8 Marks)**

a) Draw the labeled sketch and write in detail slump cone test.

b) State four objectives of compaction of concrete. Why over compaction is to avoided? Give two points.

c) Enlist four methods of waterproofing of concrete and state which method you will use for waterproofing of bathrooms.

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