**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, APRIL 2023**

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|  | **2BT4104** | Roll No. | Total Printed Pages: 2 |
| **2BT4104** |  |
| B. Tech. II Year IV- Semester (Main/Back) End Semester Examination, April 2023  **(CV)** | |
| **BCVCCV4104 : Concrete and Construction Technology** | | | |

# Time: **3** Hours. Total Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.--------------------------Nil--------------------** **2.------------------Nil-----------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | What are the basic compounds of Cement? Also discuss their influence on Concrete Strength. | **(6)** | Remembering |
|  |  |  |  |  |
|  | **(b)** | Write about different types of aggregate, also discuss about physical properties of aggregate. | **(6)** | Understanding |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.2** | **(a)** | Define hydration of cement and heat of hydration,why is heat of hydration of cement important? | **(6)** | Understanding |
|  |  |  |  |  |
|  | **(b)** | What is Manufactured sand? Discuss properties and IS Specifications of manufactured sand for use in concrete. | **(6)** | Remembering |
|  |  |  |  |  |
|  |  | **UNIT-II (CO2)** |  |  |
|  |  |  |  |  |
| **Q.3** | **(a)** | Define water/cement ratio, how it influence strength and workability of concrete? | **(6)** | Understanding |
|  |  |  |  |  |
|  | **(b)** | What do you understand by Segregation and Bleeding of concrete? Discuss causes, effect and preventive measures of Segregation and Bleeding. | **(6)** | Remembering |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.4** | **(a)** | Define Workability, also discuss factors affecting workability. | **(6)** | Remembering |
|  |  |  |  |  |
|  | **(b)** | Give name of different test to determine workability of concrete. Explain Slump test with the help of neat diagram. | **(6)** | Remembering |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
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| **Q.5** | **(a)** | What is the importance of Concrete Handling in Field? Give name of step involved in Concrete Handling in Field. | **(6)** | Evaluating |
|  |  |  |  |  |
|  | **(b)** | Explain application & use of Rebound Hammer with the help of neat diagram. | **(6)** | Applying |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.6** | **(a)** | Define Curing of concrete, discuss various methods of curing of concrete and their suitability. | **(6)** | Understanding |
|  |  |  |  |  |
|  | **(b)** | Explain application & use of Ultra-sonic pulse velocity meter with the help of neat diagram. | **(6)** | Evaluating |
|  |  |  |  |  |
|  |  | **UNIT-IV (CO4)** |  |  |
|  |  |  |  |  |
| **Q.7** | **(a)** | Define Admixture, What are the uses of admixture in concrete. Give name of different types of Chemical and mineral admixtures. | **(6)** | Understanding |
|  |  |  |  |  |
|  | **(b)** | Write short notes on followings-  I. Ground granulated blast-furnace slag (GGBFS)  II. Micro silica uses in concrete  III. Met-kaolin in concrete | **(6)** | Applying |
|  |  | **OR** |  |  |
| **Q.8** | **(a)** | What is the use of Form work? Discuss requirements of a good formwork used for cement concrete work. | **(6)** | Understanding |
|  |  |  |  |  |
|  | **(b)** | What is the use of Fly-Ash in concrete, discuss specifications of fly ash as per IS code 3812. | **(6)** | Applying |
|  |  |  |  |  |
|  |  | **UNIT V (CO5)** |  |  |
|  |  |  |  |  |
| **Q.9** | **(a)** | What do you understand by Special Concrete? Write about Sulphate resisting concrete. | **(6)** | Applying |
|  |  |  |  |  |
|  | **(b)** | Discuss about salient properties, applications and materials used for high performance concrete. | **(6)** | Remembering |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** | **(a)** | Write a short note on under water concreting and pumpable concrete. | **(6)** | Applying |
|  |  |  |  |  |
|  | **(b)** | Discuss about salient properties, applications and materials used for self-compacting concrete. | **(6)** | Evaluating |