# Advanced Civil Engineering Technologies

| Course code | Course title | No. Of period/week | Total no. Of periods | Marks for Formative Assessment | Marks for Summative Assessment |
|---|---|---|---|---|---|
| C-504 | Advanced Civil Engineering Technologies | 04 | 60 | 20 | 80 |

**Model Paper for Unit Test-I:**

**C-504, ADVANCED CIVIL ENGINEERING TECHNOLOGIES**
**DCE V SEMESTER,**
**UNIT TEST-I**

**Time: 1 hour 30 Min** **Max Marks 40**

**PART – A**

**Answer all Questions,** **(4 x 1 )+ (4x 3) = 16Marks**

1. (a) Full form of IOT…….(CO1)
   (b) Freyssinet system is a pretensioning system (True/False) (CO2)
   © Losses are more in post tension system (True/False) (CO2)
   (d) Example for advanced earth retaining system:
   (a) Power Grid (b) Geo Grid (c) Poly Grid (d) None (CO3)
2. List the components of IoT (CO1)
3. What are different types of losses of Prestress? (CO2)
4. State the advantages of Advanced earth retaining Structures? ( CO3)
5. Define the term Geo-mat (CO3)

**PART – B**

**Answer all Questions; each question carries 8 Marks** **3 x 8 = 24**

6.(A) State any eight applications of IoT in smart cities (CO1)

(OR)

(B) Mention the application of IOT in Food, water tracking and security. (CO1)

7.(A) Explain the method of Magnel -Blaton system post tensioning (CO2)

(OR)

(B) Explain the method of Gifford Udal system of post tensioning (CO2)

8.(A) Explain the method of Anchored Earth wall retaining Structure (CO3)

(OR)

(B) Explain the construction of earth retaining structure using Geogrids (CO3)

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**C-504, ADVANCED CIVIL ENGINEERING TECHNOLOGIES**
**DCE V SEMESTER,**
**UNIT TEST-II**

**Time: 1 hour 30 Min** **Max Marks 40**

**PART – A**

**Answer all Questions,** **(4 x 1 )+ (4x 3) = 16**

1.a) Pre-fabricated construction is economical in small scale projects. (true/false) (CO4)
b) The Pre-fabricated panels form a …….type of structure. (CO4)
c) Structures which are built with eco friendly materials is called …….(CO5)
d) The concept of air movement is called …….(CO5)
2. State the alternatives or cast-in-situ structures (CO4)
3. State any two advantages and disadvantages of pre-fabricated structures. (CO4)
4. Define the concept of "Green-building". (CO5)
5. List any three solar energy utilities. (CO5)

**PART – B**

**Answer all Questions; Each question carries 8 Marks** **3 x 8 = 24**

6. A) Explain the importance of standardization and modularization in Prefabrication. (OR) (CO 4)
B) Explain the large systems of Pre-fabrication. (CO 4)

7. A) Explain the mixed systems of Pre-fabrication. (CO 4)
(OR)
B) How does green building effect the environment (CO 5)

8. A) Describe the water conservative methods in case of Green-building (CO 5)
(OR)
B) Explain roof-top solar power generations systems. (CO 5)

**MODEL QUESTION PAPER, BOARD DIPLOMA EXAMINATION, (C–23)**

**DCE—FIFTH SEMESTER EXAMINATION**

ADVANCED CIVIL ENGINEERING TECHNOLOGIES, C-504

*Time* : 3 hours ] [ *Total Marks* : 80

**PART-A** 3×10=30

***Instructions*** **:**(1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the pointand shall not exceed *five* simple sentences.

**1.** Define the term IoT (CO1)

**2.** State any three key features of smart city (CO1)

**3.** List three advantages of pre stressed concrete (CO2)

**4.** List any six losses of pre-stress. (CO2)

**5.** What is retaining wall? (CO3)

**6.** State any three types of retaining walls. (CO3)

**7.** Define prefabrication (CO4)

**8.** Define embodied energy in building materials (CO5)

**9.** List the four main types of solar energy (CO5)

**10.** What is solar energy? (CO5)

**PART—B** 5×10=50

***Instructions*** **:**(1) Answer *any five* questions.

(2) Each question carries 10 marks.

(3) Answers should be comprehensive and the criteria for valuation are the content but not the length ofthe answer.

**11.** Explain the applications of IoT in *(a)* smart buildings and *(b)* smart transportation. (CO1 )

**12.** Explain the Gifford-Udal system of post tensioning with necessary legible sketch (CO2)

**13.** Explain the Freyssinet system of Post-tensioning with a sketch. (CO2)

**14.** Explain the process of reinforcing earth with Geogrids. (CO3)

**15.** Explain Geomats in advanced earth retaining structures(CO3)

**16.** Explain the types of prefabricated systems (CO4)

**17.** Explain prefabricated systems Slab/Column with wall (CO4)

**18.** Explain environmental, economic and social benefits of Green Building (CO5)