

Name:	
Enrolment No:	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2019**

<b>Course: Concrete Technology</b>	<b>Semester: III</b>
<b>Programme: B. Tech (Civil + ID)</b>	<b>Time: 03 hrs.</b>
<b>Max. Marks: 100</b>	<b>Course Code: CIVL 2011</b>

**Instructions: Write your assumptions carefully and attempt all the questions**

**SECTION A**

S. No.		Marks	CO
Q1.	Explain the importance of size, shape and texture of aggregates.	4	CO1
Q2.	List any four types of cements.	4	CO1
Q3.	Is strong concrete durable? Justify your answer.	4	CO2
Q4.	Discuss the effect of water aggregate ratio on the water content for mix design of concrete.	4	CO3
Q5.	What is the principle of rebound hammer test? What are its disadvantages/limitations?	4	CO5

**SECTION B**

Q6.	What is the effect of water cement ratio on strength of concrete?	10	CO1
Q7.	Discuss the difference between false set and flash set. How to handle them in case you encounter them on site?	10	CO2
Q8.	State the advantages and disadvantages of RMC	10	CO4
<b>OR</b>			
Q8.	What is non-destructive testing? Write a note on any one NDT test methods.	10	CO5
Q9.	How does micro-cracking lead to spalling? Discuss the process and the contributing factors.	10	CO5

**SECTION C**

Q10.	Discuss the process of hydration of cement and its importance for strength of concrete. Use illustrations to describe the micro-structure of hydrated concrete.	20	CO1 & CO2
<b>OR</b>			
Q10.	What is concrete mix design? Write the steps involved in the method of mix design (IS 10262-2009)	20	CO3
Q11.	Write a note on High-strength and high-performance concrete.	20	CO4