



Sanjay Ghodawat University, Kolhapur

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2018-19

EXM/P/09/01

Year and Program: 2018-19

School of Technology

Department of Civil Engineering
(Construction Engg. & Mangt)

Course Code: CEM503

Course Title: Concrete Processes

Semester – I

Day and Date: Wednesday
19-12-2018

End Semester Examination (ESE)

Time: Max Marks: 100
(10 to 1 PM) 3 Hrs.

Instructions:

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1	Solve the following.	Marks	Bloom's Level	CO
Q.1	a) Explain correlation of standard probability distribution and standard deviation with concrete mix proportioning. OR	07	L4	CO1
	a) Find out volumes of different ingredients of concrete of grade M-25 by ACI method. Assume suitable data.	07	L6	CO1
	b) State difference between DOE and Road note no. 4, method of concrete mix design. How does the value of standard deviation considered in both methods? OR	08	L4	CO1
	b) Elaborate acceptance criteria for test results as per IS 456-2000.	08	L4	CO1
Q.2	Solve the following.			
	a) Explain different field of applications of ultra high strength concrete with advantages and limitations. OR	07	L3	CO2
	a) Explain in details mechanical properties of self compacting concrete and fibre reinforced concrete with their areas of application.	07	L3	CO2
	b) Elaborate challenges encountered in tremie concreting under water. What are latest techniques to overcome the challenges? OR	08	L3	CO2
	b) Differentiate reactive powder concrete and high alumina concrete with reference to engineering properties.	08	L3	CO2
Q.3	Solve any Two			

a)	Explain the following:	08	L3	CO3
	1) Monitoring quality control of ingredients of self compacting concrete through RMC.			
b)	2) Specifications of heavy duty concrete pumps used for high rise structures.			
	Explain the following terms:	08	L4	CO3
c)	1) General components of automated RMC plant.			
	2) Steps in design of pumpable concrete as per relevant BIS.			
d)	Explain the following:	08	L ₂	CO2
	1) Enlist different cement composites & explain one of them.			
e)	2) General precautions while using concrete pumps.			
	Explain the following:	08	L ₂	CO3
f)	1) Admixtures used for pumpable concrete.			
	2) Differentiate water reducing admixtures and super plasticizers.			
Q.4 Solve any Two				
a)	Concreting under pressure.	09	L ₃	CO4
b)	Concreting for road pavement.	09	L ₃	CO4
c)	Tremix concrete flooring.	09	L ₃	CO4
Q.5 Solve any Two				
a)	What are different methods used for identifying distress in concrete structures. Explain method for maintenance of bridge deck.	09	L4	CO5
b)	Roll of NDT equipments in structural auditing.	09	L4	CO5
c)	Evaluation criteria for structural audit using NDT.	09	L5	CO5
Q.6 Solve any Three				
a)	Differentiate retrofitting and strengthening.	06	L5	CO6
b)	Differentiate mineral admixtures and chemical admixtures.	06	L5	CO6
c)	Different materials used for retrofitting of concrete structures?	06	L5	CO6
d)	Explain different methods to identify invisible distress in concrete structures.	06	L5	CO6
