Ref. No. EX/PG/CT/T/211/2018

M.E.CONSTRUCTION ENGINEERING SECOND YEAR FIRST SEMESTER - 2018

SUBJECT : REPAIR AND RETROFITTING TECHNIQUE-I

Time : Three hours **Full Marks : 100**

50 marks for each part

No of Questions	Part I	Marks
	Answer any **four** questions.	
Q1.	Describe the technique of electrochemical chloride extraction	12.5
Q2.	Briefly discus the procedure of cleaning and application of coating on reinforcements prior to application of repair mortar.	12.5
Q3.a)	What are the different reasons for grouting in concrete structure ?	3
Q3.b)	Write a short note on epoxy based pressure grouting in concrete repair work.	9.5
Q4.a)	What are the different applications of shotcreting ?	5
Q4.b)	Describe the "Dry Mix" process of shortcrete .	7.5
Q5.	Briefly discuss the method of surface preparation by abrasive blasting.	12.5

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M. Const. Engg. 3rd YEAR EXAMINATION, 2015

(1st Semester)

SUBJECT Repair and Retrofit Technique - I

(Name in full)

Time : ~~Two hours~~ / Three hours ~~/ Four hours / Six hours~~

Full Marks ~~30~~/100

(~~15~~ / 50 Marks for each part)

No of Questions	PART - II	Marks
	Answer any **two** questions.	
Q1.a)	Draw a sketch showing strengthening technique of beam column junction without disturbing main beam column reinforcement with help of steel angle section?	15
Q1.b)	What kind of concrete is preferable for jacketing purpose. What are the basic criteria of jacket concrete to be maintained . What role played by bonding agent applied on existing concrete surface before application of jacket concrete?	10
Q2.a)	A rectangular concrete columns, which is approachable from three side only. Draw a sketch showing jacketing technique with rebar detailing.	10
Q2.b)	Draw a sketch of stirrup reinforcement with two sets of stirrup, generally used for jacketing purpose. Describe process of beam jacketing when top of beam is not approachable with neat sketch .	10
Q2.c)	Why provision of shear connector is very important for column jacketing when only three and two sides of the column surface is available for jacketing.	05
Q3.a)	Why certain level of roughening of steel plate is a very important criteria for plate bonding. Describe the process of grit blasting on steel surface during plate bonding technique.	
Q3.b)	Why plate bonding is passive type strengthening technique.	05
Q3.c)	Describe C.F.R.P. system technique with neat sketch showing different layers.	

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No of Questions		Marks
Q3.d)	Before application of CFRP on the concrete beam on column, sharp edges are rounded up with grinding technique – explain logic behind this action.	05