Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL,2017

EXM/P/09/00

Year and Program: FinalYear B.Tech	**School of Technology**	**Department: Civil**
Course Code: CET 427	**Course Title: Design of RCC Bridges**	**Semester : VII**
Day : Saturday **Date : 26.12.2020**	**End Semester Examination**	**Time : 2 Hrs.** **Max Marks : 50**

Instructions: 1) All Questions are compulsory.
2) Assume suitable data wherevernecessary.
3) Use of IRC 6, IRC 5, IRC112:2012 ispermitted.

		Marks	Bloom's Level	CO
Q.1	**Answer the following (any Two)**–			
a)	Explain with sketch the components of a bridge structure.	8	L_2	1
b)	Elaborate characteristics of an ideal site for a major bridge across a river?	8	L_3	1
c)	Describe the IRC Standard live loads and indicate the conditions under which each should be used.	8	L_4	2
Q.2	**Answer the following (any two)** –			
a)	Compute the maximum dead load and live load BM due to class AA tracked loading if the following data is available. Width of bridge 12m, Concrete grade M25, Clear span 5.0m , Wearing course 56mm thick asphalt concrete, Width of bearing 400mm, Thickness of slab 450mm.	9	L_4	3
b)	Design cantilever slab for a bridge with following data Carriageway width 7.5m Footpath 1.0m wide Loading IRC Class AA Concrete M40 nad steel Fe 415 , No of longitudinal girders 3 Spacing between girders 3.0m , Assume wt. of railing as 0.7 kN/m Wt. of wearing coat 1.06 kN/m	9	L_4	4

c)	Design interior panel of dimension 3mx3.5m for a bridge with following data Carriageway width 7.5m Footpath 1.0m wide Loading IRC Class AA tracked Concrete M40 nad steel Fe 415 , No of longitudinal girders 3 Spacing between girders 3.0m , Assume wt. of railing as 0.7 kN/m Wt. of wearing coat 1.06 kN/m	9	L_4	4

Q.3 Answer the following (any two) –

a)	Explain the loads and forces to be considered in design of a bridge pier?	8	L_2	5
b)	Draw a typical section through a pneumatic cassion for a bride pier and explain the operation of sinking of the cassion.	8	L_2	5
c)	State the considerations for the design of an elastomeric bearing for a girder bridge?	8	L2	6

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