Total No. of Questions – [3]   Total No. of Printed Pages: 03

G.R. No.	

PAPER CODE	

May 2022 (ENDSEM) EXAM
T.Y.B. TECH. (SEMESTER - II) - CIVIL
COURSE NAME: INFRASTRUCTURE ENGINEERING
COURSE CODE: CVUA32182B
(PATTERN 2018)

Time: [1Hr]   [Max. Marks: 30]

(*) Instructions to candidates:
1) Figures to the right indicate full marks.
2) Use of scientific calculator is allowed
3) Use suitable data where ever required

SOLUTION

Question No.	Question Description	Marks	Marking Scheme and solution
Q.1	a) Write short note on vertical wall breakwater with neat sketch.	[4]	2.5 Marks Explanation and 1.5 for Diagram Marks
	b) Discuss the classification of Harbors based upon location and Purpose. **OR**	[6]	6 points – 1 Mark for Each Point
	b) Discuss site selection criteria for Harbour in detail.	[6]	6 points – 1 Mark for Each Point

Q2	a) Write a short note on Wind rose diagram with sketch	[4]	2.5 Marks Explanation and 1.5 for Diagram Marks
	b) Discuss the Zoning requirements regarding permissible heights of constructions and landing within the airport boundary. OR b) Determine the Corrected Runway Length requirement according to the for aircraft for following characteristics.	[6]	6 points – 1 Mark for Each Point
	1)Normal Landing = 1524, 2)Normal Take Off case LOD = 2134 m D35 = 2438 m 3) Engine failure Continued Take Off LOD = 2500 m D35 = 2774 m 4) Engine Failure Aborted to Take off DAS = 2900 m	[6]	For calculation of effective Gradient 05marks + Drawing Profile 1 mark, LD =2540,TOD = 2774 m, CL = 137 m FL = 2900 m
Q.3	a) Write brief note on bearings and mention its types.	[4]	3 points for 01 Mark each and for types 1 Mark.
	b) Discuss the factors affecting site selection for construction of bridge in detail. **OR**	[6]	6 points – 1 Mark for Each Point

		[6]	Avg constants for 4 m span = 106.2, 8m = 109.37, 12 m =111.1, 15 m =109 and for final answer 2 mark to find economical span =14.53 m

b) The following are the costs of one pier and one super-structure span of multiple span bridge for various span lengths. The cost of superstructure span excludes the costs of railings, and flooring system. Calculate the economic span:

Span in meter	4	8	12	15
Superstructure Cost	1700	7000	16000	24500
Sub Structure Cost	22200	23200	23000	23600