

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Scheme for Valuation/Answer Key
Scheme of evaluation (marks in brackets) and answers of problems/key
SEVENTH SEMESTER B.TECH DEGREE EXAMINATION (S), MAY 2019
Course Code: CE463
Course Name: BRIDGE ENGINEERING

Max. Marks: 100

Duration: 3 Hours

PART A*Answer any two full questions, each carries 15 marks.*

Marks

- | | | | |
|---|----|--|-----|
| 1 | a) | Definition of bridge | (2) |
| | | Explanation of components of bridge with neat sketch | (5) |
| | b) | Classification of bridges(Any 8) | (8) |
| 2 | a) | Factors to be considered while selecting suitable site for a bridge. | (7) |
| | b) | Importance of Hydraulic factors in bridge design | (8) |
| 3 | a) | Longitudinal forces on bridges | (5) |
| | b) | Impact factor and its importance | (5) |
| | c) | Clearances and carriageway width-Specifications for bridges | (5) |

PART B*Answer any two full questions, each carries 15 marks.*

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|---|----|---|------|
| 4 | | DL BM-3 marks, LL BM-5 marks | (15) |
| | | Design of deck slab-4 marks, Reinf. Detailing-3 marks | |
| 5 | | Cross section of deck -2 | (15) |
| | | Design of interior deck slab panel | |
| | | Load calculation-3 | |
| | | BM - 4 | |
| | | Design moments-3 | |
| | | Reinforcement-3 | |
| 6 | a) | Box culverts- forces and their combinations | (7) |
| | b) | Courbon's theory-Assumptions | (3) |
| | | Equations for reaction factors with explanation | (5) |

PART C*Answer any two full questions, each carries 20 marks.*

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| 7 | a) | Merits and demerits of PSC and RCC bridges | (5) |
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- b) Explanation of Elastomeric bearings with neat sketches (5)
- c) Stability analysis of abutments (5)
- 8 a) Explanation of well foundation and its components-sketches (7)
- b) Definition of bearing-2,Functions-5 (7)
- c) Forces to be considered during the design of piers and abutments (6)
- 9 DL BM-3 ,LL BM-5 (20)
- Minimum section modulus-4
- Prestressing force-4,Eccentricity -4

