

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech S8 (Hons) Exam May 2020

04CE6224—Bridge Engineering**Max. Marks: 60****Duration: 3 Hours***Use of IRC:5-2015, IRC:6-2017, IRC:21-2000 & IRC:78-2014 permitted***PART A***Answer All Questions**Each question carries 3 marks*

1. List the different types of bridge classified based on the usage.
2. Write a short note on the economic and political impact of bridge as an infrastructure.
3. Define the following : a) Highest flood level b) Road Under Bridge (RUB).
4. List the causes for longitudinal force in a road bridge.
5. Compare pre tensioning and post tensioning in bridge construction.
6. List the various functions of bridge bearing.
7. Write a few measures to prevent the failure of bridge foundation.
8. What are the different types of bridge maintenance?

PART B*Each question carries 6 marks*

9. Explain how the advances in materials and technology influenced the historical development of bridge construction.

OR

10. Explain the characteristics of an ideal bridge site for bridge across a river.
11. What are the loads, forces and load effects to be considered in the design of road bridges?

OR

12. Explain the calculation of design wind speed on super structure.

13. Calculate the live load bending moment due to Class AA tracked vehicle on a single span slab bridge of effective span 5.4m and width 12m. Thickness of slab is 550mm and wearing course is 56mm thick asphaltic concrete.

OR

14. What are the elements of a steel plate girder? Explain with the help of a neat diagram.
15. With neat diagrams, explain the various types of joints in a bridge structure.

OR

16. Explain the various types of foundations for bridges.
17. Write a note on the various forces considered in the design of abutments.

OR

18. Explain the design criteria for bridge piers as per the bridge code.
19. Explain various methods of steel bridge erection.

OR

20. Discuss the basic criteria regarding aesthetic design of bridges.
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