

लोक सेवा आयोग
नेपाल इन्जिनियरिङ सेवा, सिभिल समूह, विभिन्न उपसमूह
राजपत्राङ्कित तृतीय श्रेणी प्राविधिक पदको प्रतियोगितात्मक लिखित परीक्षा
2066/92/9

समय:- 3 घण्टा

पत्र:- द्वितीय

पूर्णाङ्क:- 100

विषय:- Technical Subject

तलका प्रश्नहरूको उत्तर Section अनुसार छुटाछुटै उत्तरपुस्तिकामा लेख्नुपर्नेछ, अन्यथा उत्तरपुस्तिका रद्द हुनेछ।

Section - A

1. Briefly describe the requirements of earthquake resistant building construction. 5
2. Define soil compaction and consolidation. What are the factors affecting soil compaction? 5
3. What are different factors to be considered in designing foundation for buildings? Explain about different types of foundations used in commercial buildings? 10
4. a) What do you mean by economical span length of a bridge? Explain. 2
- b) What types of loads are required to be considered while designing a road bridge? 5
- c) Describe the classification of steel bridge with their suitability to use considering the span length. 3

Section - B

- (x) 5. The slope of channel in alluvium is $S=1$ in 5000; Lacey's silt factor $S=0.9$ and channel side slope = 0.5:1; find the channel section and maximum discharge which can be allowed to flow in it. 5
6. Describe different methods of surface irrigation with their advantages and disadvantages. 10
7. What is simulation technique and how is it different from optimization? List two typical examples where simulation is used in water resources studies. 10

Section - C

8. Draw a neat sketch of a typical aerodrome, showing taxiways, aprons and holding bays. Describe in brief the functions of these components. 5
9. What are the controlling factors for the selection of road alignment and write note on alignment selection criteria for a hill road. 10
10. List the various geometric elements to be considered in highway design. Calculate the stopping sight distances on a graded highway for a design speed of 90 kmph. Reaction time is 2 secs and value of μ is 0.35. 4+6=10
 - a) When grade is 3% descending.
 - b) When grade is 3% ascending
 - c) When road is flat i.e. zero grade

Section - D

11. Explain the concept of environmental impact assessment in development projects. 10
12. What is activated sludge processes? Why BOD treatment for domestic waste water is important to discharge in natural water ways. 10

««The End»»