

लोक सेवा आयोग

नेपाल इन्जिनियरिङ्ग सेवा, सिभिल समूह अन्तर्गत जनरल/हाइवे/स्यानिटरी/इरिगेशन/हाइड्रोपावर/हाइड्रोलोजी/एयरपोर्ट उपसमूह, राजपत्र अनङ्कित प्रथम श्रेणी (प्राविधिक) पदको प्रतियोगितात्मक लिखित परीक्षा

मिति:- २०८०।०५।१२

समय: २ घण्टा १५ मिनेट

पूर्णाङ्क:- १००

पत्र: द्वितीय

विषय: सेवा सम्बन्धित कार्य-ज्ञान

नेम्न प्रश्नहरूको उत्तर Section अनुसार छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ।

Section – A

1. What do you mean by three point problem ? Explain several methods for solution of that problem. 5
2. Write down the various ingredients and the physical properties of the cement. 5
3. Draw shear force and bending moment diagram of a beam loaded with 4 kN/m uniformly distributed load having length 4 m. The support condition of beam is one end hinge and other end roller. 5
4. Briefly describe the discharge measurement method through notches. 5
5. What are the factors that affect compaction of soil? Illustrate the relation between compaction and optimum moisture content. 5
6. What is development length? What are the methods for achieving development length? 5
7. A sample of saturated soil has the water content of 25% and bulk unit weight of 20 kN/m³. Determine the dry unit weight, void ratio and specific gravity of solids. 4+3+3=10
8. Name the different forms of energy of flowing liquid. Explain the principle of conservation of energy and the relationship between Hydraulic Gradient Line (HGL) and Total Energy Line (TEL). 10

Section – B

9. What are the major causes of dampness? List the methods of damp proofing . 5
10. What are the functions of septic tank? Draw a schematic diagram of a septic tank showing its main components. 5
11. What are the major losses in irrigation canal ? Explain in brief. 5
12. List the various geometric elements to be considered in highway design. What are the factors on which the stopping sight distance depends ? 5
13. Prepare a specification for plastering work in exterior wall in cement sand mortar (1:4). 5
14. Shortly introduce the National Competitive Bidding (NCB) procedure for procurement of work practiced in Nepal. 5

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15. What is Manning's rugosity coefficient ?. For an earthen rectangular canal, calculate the discharge if width of the canal is 2 m and depth of flow is 1.5 m . Assume Manning's rugosity coefficient as 0.025 and longitudinal slope of canal is 1 in 4000. 2+8=10
16. Calculate the safe stopping distance for design speed 60 km per hour for a two-way traffic on a two-lane road assuming coefficient of friction is 0.37 and reaction time of driver as 2.5 seconds. 10

««« The End »»»