

# प्रदेश लोक सेवा आयोग

## बागमती प्रदेश

इन्जिनियरिङ सेवा, सिभिल समूह, पाँचौं तह, सब इन्जिनियर पदको

खुला प्रतियोगितात्मक लिखित परीक्षा-२०७९

परीक्षा मिति: २०७९/१२/०४

पत्र: द्वितीय

पूर्णाङ्क: १००

विषय: सेवा सम्बन्धित कार्य-ज्ञान

समय: २ घण्टा १५ मिनेट

निम्न प्रश्नहरूको उत्तर Section अनुसार छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नु पर्नेछ अन्यथा उत्तरपुस्तिका रद्द हुनेछ।

### Section - A

[50 Marks]

1. Describe under reinforced, over reinforced and balanced RCC section. [5]
2. Write down the various equipment used in field compaction of soil. [5]
3. Differentiate between weir and notch. Explain their uses. [3+2]
4. Define shear force and Bending Moment, discuss its relationship. [5]
5. What are the different types of cement? Write down the ingredients of Portland Cement. [2+3]
6. What are the qualities of good bricks? Why we should be careful about the harmful ingredients in brick earth? [2+3]
7. Explain the principles of levelling. Describe reciprocal levelling with sketch. [10]
8. Calculate shear force and Bending Moment of simply supported beam of span  $(l)=4$  m and carries uniformly distributed load  $(udl)=5$  KN/m. Sketch shear force and B.M. diagram with calculated value. [10]

### Section - B

[50 Marks]

9. Describe about various types of foundation of structure. [5]
10. The catchment area of the city is 200 hectors and its population density is 300/hector. The water supply cooperation supplied at the rate of 135 lpcd in the city. Calculate the quantity of sewage generation if the 85% of the water supplied is being collected as wastewater at the treatment plant. Assume the peak factor for water supply is 2. [5]
11. Write down the advantage and disadvantages of irrigation. [5]
12. Define highway drainage and explain the importance of highway drainage. [2+3]
13. Describe about different types of estimates of civil works. [5]
14. Define Bar Chart with figure and explain its advantages and disadvantages. [5]
15. Describe different types of wall system and their function and advantages in building construction. [10]
16. What are the basic design controls and design criteria for roads in Nepal? Also draw a neat sketch of typical cross section of road with pavement structures. [7+3]

\*समाप्त\*