

प्रदेश लोक सेवा आयोग

प्रदेश नं. १, विराटनगर

स्थानीय सरकारी सेवा अन्तर्गत प्राविधिक तर्फ इन्जिनियरिङ्ग सेवा, सिभिल समूह, अधिकृतस्तर छैटौं तह, इन्जिनियर पदको प्रथम चरणको खुला प्रतियोगितात्मक लिखित परीक्षा

समय:- ३ घण्टा

पत्र:- द्वितीय

मिति:- २०७९/०४/१४

पूर्णाङ्क:- १००

विषय:- जनरल सिभिल इन्जिनियरिङ्ग सम्बन्धी।

सबै प्रश्नहरू अनिवार्य छन्। प्रश्नहरूको उत्तर खण्ड (Section) अनुसार बेलाबेलै उत्तरपुस्तिकामा लेख्नुपर्नेछ अन्यथा उत्तरपुस्तिका रद्द हुनेछ।

(Section A) – 30 Marks

1. What is bio-engineering? What are the best practices in bio-engineering along the hill road side? What are the advantages of bio-engineering along the road? [2+5+3]
2. Discuss the factors deciding the alignment of roads. Explain the special consideration for alignment of hill roads. [5+5]
3. Discuss the differences between flexible and rigid pavements. Explain different factors affecting design of flexible pavement. [4+6]

(Section B) – 20 Marks

4. With the help of flow diagram, describe water treatment process in brief. [2+8]
5. A village has designed year demand of water 25000 liters/day. The demand is met by a continuous system of supply from a spring source with measured of 0.45 Lps. The water consumption pattern of village is as follows.

Time (Hours)	5-7	7-12	12-17	17-19	19-5
Consumptions %	25	35	15	25	0

- (a) Determine the balancing reservoir capacity for the village by using above data.
- (b) Describe the problems and solution associated with Gravity and pumping gravity combined water supply systems in Nepal? [6+4]

(Section C) – 30 Marks

6. Discuss the major energy sources at present. Which is the most useful alternative source of energy for Nepal? Explain in brief. [7+3]
7. What is the difference between agency managed and farmer managed irrigation system? Write down the procedure for design of an irrigation canal having parameters: Discharge, Maximum permissible velocity, Manning's coefficient, Bed slope and the side slope. [3+7]
8. Describe about the water induced disaster problems and suggestion for its minimization. Explain on the River training classification, types, necessity and objectives. [10]

(Section D) – 20 Marks

9. The role of local construction materials is very important in construction works. How the quality standards in terms of production and application can be improved to meet the engineering and architectural requirements? Explain in brief. [10]
10. What is social mobilization? What are the steps of social mobilization in local infrastructure development and utilization? Why it is important for local infrastructure development and utilization? [2+4+4]

<<The End>>