लोक सेवा आयोग

स्थानीय तह अन्तर्गत प्राविधिकतर्फ इञ्जिनियरिङ्ग सेवा, सिविल समूह, छैठौं तह,
इञ्जिनियर पदको प्रतियोगितात्मक लिखित परीक्षा

२०८६।०५।१३

पत्र: द्वितीय

समय :- 3 घण्टा

पूर्णाङ्क :-

विषय:- जनरल इञ्जिनियरिङ्ग

निम्न प्रश्नहरूको उत्तर खण्ड (Section) अनुसार छुट्याइ उत्तरपुस्तिकामा लेख्नुपर्नेछ, अन्यथा उत्तरपुस्तिका रद्द हुने । परीक्षामा मोबाइल वा यस्तै सञ्चार उपकरणहरू प्रयोग गर्न पाइने छैन ।

खण्ड (Section) – A

1. Mention different types of road pavements. Explain how you would design an appropriate pavement for a hill road. 3+7=
2. Write down some methods of Bio-engineering practices along hill side of Nepal.
3. (a) What are the various criteria that should be fulfilled while designing sub-surface drains?
   (b) What are the various tests that are used for assessing the suitability of road aggregates?

खण्ड (Section) – B

4. (a) What are the different types of distribution service reservoir used in water supply project in Nepal? How its storage capacity is determined?
   (b) What is self-clearing velocity and non-scouring velocity in a sewer? Why sewers are not designed to full flow?
5. Write down short note on:
   (a) Sources of solid waste
   (b) Design features of septic tank
   (c) Various types of joints used in pipes

खण्ड (Section) – C

6. Why river training is necessary? Describe the various methods of river control.
7. (a) What is berm? Why is it provided in the canal? 2+2
   (b) Draw sketches to show the section of canal.
   i) Partly in cutting and partly in filling
   ii) Wholly in cutting
   iii) Wholly in filling
8. (a) What types of alternative energy systems are feasible in Nepal?
   (b) Explain with the help of a neat sketch the hydrological cycle.

खण्ड (Section) – D

9. Differentiate Environmental Impact Assessment (EIA) with Initial Environmental Examination (IEE).
10. Explain with neat sketches the method of setting out of a school building in a municipal area.

«« The End »»

लोक सेवा आयोग

स्थानीय तह अन्तर्गत प्राविधिकतर्फ इञ्जिनियरिङ्ग सेवा, सिभिल समूह, बिल्डिङ्ग एण्ड आर्किटेक्ट उपसमूह,
छैठौं तह, इञ्जिनियर पदको प्रतियोगितात्मक लिखित परीक्षा

२०६६।०४।१४

समय :- ३ घण्टा | पत्र: द्वितीय | पूर्णाङ्क - १००

विषय:- बिल्डिङ्ग एण्ड आर्किटेक्ट सम्बन्धी

निम्न प्रश्नहरूको उत्तर Section अनुसार छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ, अन्यथा उत्तरपुस्तिका रद्द हुनेछ । परीक्षामा नोक्साइल वा यस्तै सञ्चार उपकरणहरू प्रयोग गर्न पाइने छैन ।

Section – A

1. What are the different types of a roofing system? Describe one of them in detail. 5+5=10
2. Describe various types of concrete blocks used in buildings. What are the advantages and disadvantages of hollow concrete blocks? 5+5=10
3. Describe the hierarchy of building codes as per Nepal National Building Code. Who are the main actor in the implementation of building code? 5+5=10

Section – B

4. Explain about the RCC footings, columns, slabs, beams. 10
5. What do you understand by MRT (Mandatory Rule of Thumb) in building design? Describe in brief the major criteria of designing a building by MRT method as mentioned in National Building Code of Nepal. 10

Section – C

6. What is affordable housing for different income groups of people? 10
7. What are the different components of a land-use plan and how it is implemented? 5+5=10
8. What do you understand by "Base Map"? Describe in brief about the types of data and information needed to prepare a base map of a municipality. 10

Section – D

9. List out the architectural land marks buildings of Nepal. Describe the main features of one of them. 4+6=10
10. Explain about the features of traditional architecture in Nepal. 10

== The End ==

लोक सेवा आयोग

नेपाल इञ्जिनियरिङ्ग सेवा, सिभिल समूह, विभिन्न उपसमूह
राजपत्राङ्कित तृतीय श्रेणी प्राविधिक पदको प्रतियोगितात्मक लिखित परीक्षा

2066/9/19

समयः- ३ घण्टा पूर्णाङ्कः- १००

पत्रः- द्वितीय

विषयः- Technical Subject

Section - A

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

Section - B

5. The slope of channel in alluvium is laid in soil, Lacey's silt factor = 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 a 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»

लोक सेवा आयोग

नेपाल विद्युत प्राधिकरण, प्राविधिक, सिभिल, सिभिल, सातौं, इञ्जिनियर पदको

प्रतियोगितात्मक लिखित परीक्षा

२०७६।०७।३०

पत्र : द्वितीय
समय : ३ घण्टा

पूर्णाङ्क : १००

विषय : सेवा सम्बन्धी

प्रत्येक Section को उत्तर छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ । अन्यथा उत्तरपुस्तिका रद्द हुनेछ ।

Section 'A' — 50 Marks

1. A) Write the factors to be considered in selecting a site for a Stream Gauging Station ? 5

   B) How is a stage-discharge rating curve extended ? State. 5

2. Mention the types of Dam on the basis of functions and construction materials. 10

3. A) Differentiate pelton turbine with francis turbine. 5

   B) Why is vertical shaft arrangement preferred while laying turbine and generator in a power house ? Write down. 5

4. What are load curves ? How can pondage requirements be determined from studying the daily load curve ? Explain about some typical situations where pondage is usually required. 4+3+3=10

5. Discuss about the major requirements for hydrological, topographical and geotechnical investigations in a hydropower project. 4+3+3=10

Section 'B' — 50 Marks

6. How do you calculate the volume using contour lines ? Describe with an example. Why are chemical admixtures used in concrete ? What do you mean by grade of concrete ? Describe. 4+2+4=10

7. Describe about the tests (any two of them) to be carried out for concrete works along with their importance. 5+5=10

8. A) Describe briefly any two valuation methods of a property. 5

   B) How could the probable accidents be avoided or reduced in a project ? 5

9. Why is free hand drawing necessary at construction sites ? Why is safety engineering necessary during construction of a project ? Explain. 4+6

10. What are the problems among Client, Consultant and Contractor in the implementation of construction projects in Nepal ? Give your suggestions to rectify those deficiencies. 5+5=10

- The End -

प्रदेश लोक सेवा आयोग

बागमती प्रदेश

इञ्जिनियरिङ सेवा, सिभिल समूह, छैटौं तह, इञ्जिनियर पदको खुला प्रतियोगितात्मक लिखित परीक्षा-२०७७

परीक्षा मितिः २०७७/१२/२१

पत्रः द्वितीय
विषयः जनरल इञ्जिनियरिङ सम्बन्धी

पूर्णाङ्कः १००
समयः ३ घण्टा

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

Section - A [30 Marks]

1. Explain the field construction procedures of earthen roads and use of equipments.[10]
2. What are the different types of structures suitable in hill roads of Nepal? Briefly describe some of the special features of hill road drainage system. [5+5]
3. What are the various types of surveys and investigations required in connection with a road project? Describe briefly. [10]

Section - B [20 Marks]

4. What are the requirements of wholesome water? Briefly introduce different types of water treatments practiced in Nepal. [3+7]
5. (a) Briefly explain the design principles for the Septic Tank. [5]
   (b) What do you mean by sanitary land fill site (SLFS) and how it is different from traditional method of solid waste disposal? [5]

Section - C [30 Marks]

6. Describe the status of hydropower and other energy uses in Nepal. Do you think solar energy can be a good alternative in Nepal to overcome the problem of energy crisis? Justify your opinion. [5+5]
7. Describe discharge measurement methods of rivers or streams. How to apply the measured data in canal design? [10]
8. What do you mean by River Training? Briefly introduce the types of river training appropriate to hilly and plain areas of Bagamati Province? [10]

Section - D [20 Marks]

9. What are the different factors to be considered for the design and construction of an energy efficient, safe, economical and earthquake resistant building in Nepal? [10]
10. Why do development plans fail in Nepal to achieve the desired targets? What are the advantages of participatory planning process? [5+5]

•समाप्त•

लोक सेवा आयोग

नेपाल इञ्जिनियरिङ्ग सेवा, सिभिल समूह, बिल्डिङ्ग एण्ड आर्किटेक्ट उपसमूह
राजपत्राङ्कित तृतीय श्रेणी (प्राविधिक) पदको प्रतियोगितात्मक लिखित परीक्षा

२०८/१२/१२

समयः- ३ घण्टा

पूर्णाङ्कः- १००

पत्रः- द्वितीय

विषयः- Technical Subject

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

Section - A

1. Describe advantages and disadvantages of prefabricated building construction. Discuss why this construction technique is not widely used in Nepal? 5+5=10

2. Draw plan, elevation and section of a typical wooden window in wooden frame showing jamb details, MS grill, Glass and Jail shutters. 10

3. Describe in brief the significance of National Building Code in Nepal. What is the status of NBC implementation? What are the challenges in NBC implementation? 4+3+3=10

Section - B

4. Describe briefly the failure mechanism of masonry structures on earthquake with sketches. 5

5. What are the basic requirements for earthquake resistant building construction? Explain in detail with the help of sketches. 5

6. Mention the design steps for RC column with bi-axial bending and axial compression. Write the steps for eccentric RC footing design. 5+5=10

Section - C

7. What is a physical and Environmental Development Plan of a municipality? How is it drafted and finalized? 10

8. Mention the major features of building byelaws prevalent in Kathmandu Metropolitan City. How these features are incorporated in the periodic plans and planning legislations? 5+5=10

9. The Constitution of Nepal has provisioned the right to appropriate housing to every citizen. To address this fundamental right of people, government has initiated different housing programs. Describe in brief about these housing programs and their effectiveness to address the need of people. 10

Section - D

10. Describe the principle of architectural design of buildings for hot climates. Explain with the help of sketches. 5

11. Mention the major features of Shikhara, Stupa and Pagoda styles of ancient Nepalese architecture. 5

12. What are the characteristic of Patan Darwar Square? Sketch in details. 5+5=10

«««The End»»»

लोक सेवा आयोग

नेपाल इञ्जिनियरिङ्ग सेवा, सिभिल समूह, जनरल/हाइवे/हाइड्रोपावर/स्यानिटरी/इरिगेशन उपसमूह,
राजपत्राङ्कित तृतीय श्रेणी (प्राविधिक) पदको प्रतियोगितात्मक लिखित परीक्षा

2067/9/25

समय :- ३ घण्टा | पत्र :- Second | पूर्णाङ्क :- १००

विषय:- Technical Subject

तलका प्रश्नहरुको उत्तर **Section** अनुसार बेग्लाबेग्लै उत्तरपुस्तिकामा लेख्नुपर्नेछ अन्यथा उत्तरपुस्तिका रद्द हुनेछ ।

Section -A

1. List out the rule of thumbs for RCC Buildings without masonry infill. (5)
2. Write short notes on factors affecting coefficient of permeability. (5)
3. Illustrate the types of slope failures with suitable sketches. A vertical cut is made in a clay deposit.
   [consider: c=30 KN/m², ϕ = 0, r = 16KN/m³ Fc= 1.00 and Sn=0.261] (5+5=10)
4. List out and discuss the loads, forces and stresses which are to be considered in the designing of a road bridge. (10)

Section-B

5. List out the points to consider for locating a reservoir site of a hydropower project. (5)
6. What are common formulae used to calculate velocity of fluid in open channel? Explain manning's formulae with its uses. (10)
7. What are the common criteria for selecting the type of dam for a particular site condition? What are the advantages and disadvantages of selecting rock-filled dam? (10)

Section-C

8. What are the different causes of traffic accidents? Explain various measures that may be adopted to prevent accidents. (2+3=5)
9. What are the types of bituminous pavements? Explain briefly. Also mention the tests that are carried out in laboratory and field for the quality control of bitumen mixes. (10)
10. Describe briefly the history of civil aviation in Nepal. Point out the factors considering in the selection of airport location. List out the factors considered in the design of runways. (3+3+4=10)

Section-D

11. A water supply company has to purify the turbid water for a city whose daily demand is 200000 liters. Design a suitable plain sedimentation tank fitted with mechanical sludge remover. Assume the velocity of flow in the tank as 20 cm/minute and the detention time as 10 hours. (10)
12. Describe the sewage treatment process with a typical lay out of sewage treatment plant. (5+5=10)

~ The End ~

लोक सेवा आयोग

नेपाल विद्युत प्राधिकरण, प्राविधिक, सिभिल, सिभिल, सातौ, इन्जिनियर पदको खुला प्रतियोगितात्मक लिखित परीक्षा

२०८०।०९।१६

पत्र : द्वितीय
समय : ३ घण्टा

पूर्णाङ्क : १००

विषय : सेवा सम्बन्धी

प्रत्येक Section को उत्तर पुस्तापुर्दै उत्तरपुस्तिकामा लेख्नुपर्नेछ । अन्यथा उत्तरपुस्तिका रद्द हुनेछ ।

Section : "A"

50 Marks

1. What is the flow duration curve and its significance? What factors influence the flow duration curve and how do you calculate the flow duration curve? 3+3+4=10
2. What are the considerations to be made in selecting the type of dam and the site where it is to be constructed? 5+5=10
3. How does the specific speed differ from the real speed of a turbine? Write the basic working principles of a Francis turbine used in a hydropower plant. 5+5=10
4. Answer the followings: 5+5=10
   a) Describe merits and demerits of run-off river and storage hydropower schemes in the context of Nepal.
   b) Describe why storage hydropower plants are less popular in Nepal.
5. What is the concept of integrated water resource management? Why is it needed in the context of Nepal? Explain. 5+5=10

Section : "B"

50 Marks

6. Describe total station equipments. What are the uses and importance of total station equipments? 4+6=10
7. What are the factors which affect the physical properties of steel? Briefly discuss the various forms of steel available in the market for construction purposes? 3+7=10
8. Describe a concept of pre-stressed reinforced concrete structures. What are the merits and demerits of pre-stressed reinforced concrete structures? 5+5=10
9. Describe the purpose, types and importance of specification. 2+4+4=10
10. Write short notes on: 5+5=10
    a) Drawing Scales
    b) Orthographic Projection

लोक सेवा आयोग

नेपाल इञ्जिनियरिङ्ग सेवा, सिभिल समूह, बिल्डिङ्ग एण्ड आर्किटेक्ट उपसमूह
राजपत्राङ्कित तृतीय श्रेणी (प्राविधिक) पदको प्रतियोगितात्मक लिखित परीक्षा
मितिः २०७९/१०/१८

समयः ३ घण्टा

पूर्णाङ्कः १००

पत्रः- द्वितीय

विषयः- Technical Subject

निम्न प्रश्नहरूको उत्तर Section अनुसार छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ ।

Section – A

30 Marks

1. Write about the uses of brick masonry. List out the types of bonds in brick masonry. 5
2. Define the basic principles and objectives of low cost building construction. 5
3. Explain and differentiate the uses and methods of shoring and underpinning in building. 10
4. What are building services and its significance especially in the efficient operation of any building? Elaborate. 10

Section – B

20 Marks

5. Explain in detail the steps to be carried out to design a RCC footing structure. 10
6. During the Earthquake of 2072 in Nepal, RCC buildings in some parts of the country were heavily damaged. Discuss the structural problems that might have led to the damage. 10

Section – C

30 Marks

7. What are base maps? Also, illustrate characteristics of a good base map. 5
8. What are some of the land development techniques used in the context of Nepal for residential development? Write down. 5
9. What are the challenges of urban development in Nepal? Describe in brief the roles of municipalities to respond those challenges. 6+4=10
10. Mention the prevalent housing typology of Kathmandu Valley. Outline the major housing design principles for apartment buildings. 5+5=10

Section – D

20 Marks

11. What key factors need to be considered while designing buildings in order to make it sustainable? Discuss. 10
12. Write down the main features of contemporary Nepalese architecture. Also, list out the architectural landmarks in Kathmandu Valley. 5+5=10

«««The End»»»

25 Marks

Section - C

7. What factors to be considered while selecting a location for airport? List down the factors. 5

8. Enlist the various types of bitumens and their quality tests. Explain CBR test and its importance in design of flexible pavement. 10

9. Briefly discuss the governing factors for calculating sight distance as per the Nepal Road Standard-2070. Calculate the safe stopping sight distance for design speed of 50 kmph for the following: 4+6=10

   a) Two way traffic on a two lane road

   b) Two way traffic on a single lane road.
   (Assume: f : 0.37 and t : 2.5 seconds)

20 Marks

Section - D

10. You may be aware that the GoN planned to construct two dams near the source of Bagmati River. Dhap dam, the first of the two is already constructed and Nagamati is under preparation. Dhap dam is designed to discharge 40 lps water with BOD_5 of 5 mg/L to Bagmati River and Nagamati is designed to discharge 400 lps water to Bagmati River with BOD_5 of 8 mg/L. Both dams will be operated during 8 months of the dry period. Both dams will discharge at upstream of the river, which then passes through Gokarna, Guheshwori and Pashupati. Guheshwori has a new waste water treatment plant, which is in operation now. Guheshwori WWTP which is in operation, discharges 370 lps treated waste water with a BOD_5 of 10 mg/L. Now, calculate the BOD_5 of Bagmati River at Pashupati assuming Nagamati dam is also operational and there are no other sources that contribute water or waste water in the Bagmati other than these three sources. Your calculation is for the 8 months when dams are releasing water into the Bagmati. 5

11. Discuss the necessity of filtration in water treatment process. Also, explain the principles of filtration. 5

12. Defining Biochemical Oxygen Demand of waste water, explain a set of Primary and Secondary Treatment units to remove it. 10

«««The End»»»

लोक सेवा आयोग

नेपाल इञ्जिनियरिङ्ग सेवा, सिभिल समूह, विभिन्न (जनरल, हाईवे, स्यानिटरी, ईरिगेशन, हाइड्रोपावर) उपसमूह
राजपत्राङ्कित तृतीय श्रेणी (प्राविधिक) पदको प्रतियोगितात्मक लिखित परीक्षा
मिति: २०७९/१०/१४

समय: ३ घण्टा

पूर्णाङ्क: १००

पत्र:- द्वितीय

विषय:- Technical Subject

निम्न प्रश्नहरूको उत्तर Section अनुसार छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ ।

Section - A

30 Marks

1. What are the requirements of earthquake-resistant building construction? Describe. 10

2. A square footing is to be constructed at a depth of 3.6 m below ground level on a sandy clay for which the cohesion is 0.575 kg/cm^2 and the density is 1.73 g/cm^3. The total load applied on the soil is 375 tones uniformly distributed over the area of contact. Find the size of the footing using a load factor of 3. Take the relevant values of the factors as Nc=10, Nq=4, Nγ=2. 10

3. Explain the basic differences among the retaining wall design of gravity, cantilever and counter fort type wall. What will be the pressure exerted at base of height 'h' with half height of water table? Assume density of soil as 'γ'. 5+5=10

Section - B

25 Marks

4. "Hydraulic jump can dissipate energy". Justify this statement with appropriate illustrations (figures, examples, equations, where relevant). 5

5. How can we estimate groundwater storage potential in an aquifer? Describe and illustrate with appropriate examples the key concept of unsaturated zone groundwater hydrology and key factors that control the water flow in unsaturated zone. 4+6=10

6. Answer the following question. 5+5=10

   a) How do you compare water hammer with tsunami? Provide freehand sketches of different types of surge tanks and label the components.

   b) Water stands on the upstream side of the gravity dam of triangular section up to the full height of 35 m. The base width of the dam is 26 m. The uplift pressure intensity 'K' may be assumed to be 0.5. Show that;

      i) No tension exists anywhere along the base of the dam

      ii) The dam is safe against sliding

      iii) The maximum compressive stress in the body of the dam is less than the allowable crushing stress of the material 11 kgf/cm^2

      iv) The dam is safe against overturning

   Take the coefficient of friction between base and the foundation as 0.75 and the unit weight of material of the dam as 2400 kgf/m^3.

प्रदेश लोक सेवा आयोग

गण्डकी प्रदेश

इन्जिनियरिङ सेवा, सिभिल समूह, जनरल, इरिगेशन र स्यानिटरी उपसमूह, अधिकृत सातौं तह, इन्जिनियर पदको (अन्तर तह, खुला तथा समावेशी) प्रतियोगितात्मक लिखित परीक्षा

परीक्षा मिति: २०८०/०५/२०

समय: ३ घण्टा | पत्र: द्वितीय | पूर्णाङ्क: १००

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

Section-A

1. Briefly describe the design considerations for column. (5)
2. Mention the factors affecting compaction. (5)
3. Define and differentiate between compaction and consolidation of soil mass. Write down assumptions for Terzaghi's one dimensional consolidation theory. (5+5)
4. Compare the concepts behind the working stress and limit state design of concrete structures. What type of "limit states" are considered in the limit state design approach? (7+3)

Section-B

5. What are the assumptions of unit hydrograph? Describe the limitations of unit hydrograph. (3+2)
6. Explain the different terms in the Bernoulli's Equation. What assumptions must be met for this equation to be applicable? How can it be applied in using a Pitot tube? (4+3+3)
7. Despite the huge potential of horticulture and vegetable farming in the mild-hills cannot be achieved due to shortage of irrigation, please suggest the appropriate methods of irrigation system to be adopted. Can it be tied with reservoir hydropower projects? (5+5)

Section-C

8. Briefly discuss the challenges in hill road construction. (5)
9. Can you explain what the difference between a roadway, a highway, and a freeway? Write the categories of roads as provisioned on Nepal Roads Standard 2070? Explain the use of tunnels and high bridges in highways in Nepal. (3+4+3)
10. Road condition in Nepal is poor to fair. What are the reasons behind it? How can we improve the condition of road? Please suggest the best practices of road maintenance in the world. (3+3+4)

Section-D

11. What is the principle behind an activated-sludge treatment plant? Explain with a neat flow diagram. Also compare the conventional and step-aeration activated-sludge processes. (3+3+4)
12. What are the important uses of water? What is the per capita average demand for a Nepali Town for different uses? Explain the impurities in water and the purification mechanism of water at household level in Nepal. (2+4+4)

-The End-

प्रदेश लोक सेवा आयोग

बागमती प्रदेश

इन्जिनियरिङ सेवा, सिभिल समूह, बिल्डिङ एण्ड आर्किटेक्ट उपसमूह, छैटौं तह, इन्जिनियर पदको खुला प्रतियोगितात्मक लिखित परीक्षा-२०७९

परीक्षा मितिः २०७९/०२/१८

पत्रः द्वितीय — पूर्णाङ्कः १००

विषयः बिल्डिङ एण्ड आर्किटेक्ट सम्बन्धी — समयः ३ घण्टा

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

Section - A [30 Marks]

1. Why do we need building code? Describe the hierarchy of building code as per Nepal National Building code. [3+7]
2. Explain about effective development control system in construction field in the case of municipalities of Nepal. [10]
3. List out the different steps involved in RCC non-load bearing building construction with brief introduction. [5+5]

Section - B [20 Marks]

4. Define the shallow foundation. What are its types? Describe about the mat foundation. [2+2+6]
5. Explain about requirements and main features for Earthquake Resistance as per NBC 105, 2077 seismic design of building in Nepal. [10]

Section - C [30 Marks]

6. Describe the types of land development that is commonly applied in Nepal. Under what legislation the land development schemes can be implemented? Describe briefly salient feature of a land pooling scheme. [4+2+4]
7. Describe about planning legislation, in the context of federal structure of Nepal. [10]
8. Are conservation of heritage sites being done in a proper way in Nepal? What are the various issues that are required to be addressed for conservation of our heritage sites? Describe in brief. [4+6]

Section - D [20 Marks]

9. State briefly the main problems in standardization of government building in Nepal. [10]
10. Define ethics. What are the ethics of architects in professional practices? [10]

•समाप्त•

लोक सेवा आयोग

नेपाल विद्युत प्राधिकरण, प्राविधिक, सिभिल, सिभिल, सातौ, इञ्जिनियर पदको

प्रतियोगितात्मक लिखित परीक्षा

२०७६।०७।३०

पत्र : द्वितीय
समय : ३ घण्टा

पूर्णाङ्क : १००

विषय : सेवा सम्बन्धी

प्रत्येक **Section** को उत्तर छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ । अन्यथा उत्तरपुस्तिका रद्द हुनेछ ।

Section 'A' — 50 Marks

1. A) Write the factors to be considered in selecting a site for a Stream Gauging Station ? 5

   B) How is a stage-discharge rating curve extended ? State. 5

2. Mention the types of Dam on the basis of functions and construction materials. 10

3. A) Differentiate pelton turbine with francis turbine. 5

   B) Why is vertical shaft arrangement preferred while laying turbine and generator in a power house ? Write down. 5

4. What are load curves ? How can pondage requirements be determined from studying the daily load curve ? Explain about some typical situations where pondage is usually required. 4+3+3=10

5. Discuss about the major requirements for hydrological, topographical and geotechnical investigations in a hydropower project. 4+3+3=10

Section 'B' — 50 Marks

6. How do you calculate the volume using contour lines ? Describe with an example. Why are chemical admixtures used in concrete ? What do you mean by grade of concrete ? Describe. 4+2+4=10

7. Describe about the tests (any two of them) to be carried out for concrete works along with their importance. 5+5=10

8. A) Describe briefly any two valuation methods of a property. 5

   B) How could the probable accidents be avoided or reduced in a project ? 5

9. Why is free hand drawing necessary at construction sites ? Why is safety engineering necessary during construction of a project ? Explain. 4+6

10. What are the problems among Client, Consultant and Contractor in the implementation of construction projects in Nepal ? Give your suggestions to rectify those deficiencies. 5+5=10

- The End -