

**नेपाल नागरिक उड्डयन प्राधिकरण**  
प्राविधिक सेवा, सिभिल इन्जिनियरिङ्ग समूह, सातौं तह, बरिष्ठ अधिकृत पदको  
नमूना प्रश्नपत्र

पत्र : द्वितिय  
समय : ३ घण्टा

विषय : सेवा सम्बन्धी

पूर्णाङ्क १००

प्रत्येक खण्डको उत्तर छुट्टाछुट्टै उत्तरपुस्तिकामा लेख्नुपर्नेछ । अन्यथा उत्तरपुस्तिका रद्द हुनेछ ।

**Section 'A'**

**50 Marks**

1. A beam of uniform cross section resting on two supports 'b' m apart has an equal overhang of 'a' m on either end. Determine the ratio  $\frac{b}{a}$  when the magnitude of mid span bending moment is equal to the magnitude of support bending moment due to its own weight. Draw the bending moment diagram for this condition. 5
2. Write a short note on the determination of Aerodrome Reference Code as per International Civil Aviation Organization (ICAO) Annex-14. 5
3. Discuss different design considerations that should be given in the planning of the terminal area. What is an apron-gate system and how does it help to make the terminal area more efficient? 6+4=10
4. Give a historical review of the development of Civil Aviation in Nepal. How does International Civil Aviation Organization (ICAO) help in its development? 7+3=10
5. Discuss the differences between Rigid Pavement and Flexible Pavement. Explain the CBR method of design for flexible airport pavement. 5+5=10
6. What are the factors to be considered for a suitable site selection of airports? Draw a sketch of airport showing major components. 6+4 = 10

**Section 'B'**

**50 Marks**

7. Give an introduction of the problem about Tribhuvan International Airport (TIA) regarding the runway pavements. Also, describe in brief the major causes of it. 5
8. Classify the soil according to Indian soil classification system. 5
9. Describe in brief why following activities are important on project management. 2x5=10
  - a) Cost control and quality control
  - b) Project monitoring and evaluation
10. Discuss different methods of calculating quantities. Prepare an analysis of rates for brick work with well burnt traditional bricks in super structure built in cement mortar 1:6 (1 cement: 6 coarse sand), assume suitable rates for labours and materials. 4+6 = 10
11. Discuss different methods used for the repair of Rigid Airport Pavement. Explain the procedure generally used to repair cracks less than 2.5 cm in width in flexible pavements. 6+4 = 10
12. Give an example of theodolite traversing and computation of coordinates and necessary adjustment of closed traverse and closing errors. You are also advised the benefit of using Total Station and EDM, while assuming the necessary data and computing the same. 5+5=10