GANPAT UNIVERSITY

B. Tech. Semester: IV Civil Engineering

Regular Examination April - June 2015

2CI- 404 BASIC TRANSPORTATION SYSTEMS

Time: 3 Hours   Total Marks: 70

Instruction: 1. Answer to the two sections must be written in separate answer books.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Section - I

Que. – 1	A	Define the following terms: Airport Capacity, Apron, Rudder, Runway, Hangar, Fuselage	06
	B	Give Illustrations showing social significance of transport	06

OR

Que. – 1	A	Enumerate and explain the various factors which you would keep in view while selecting a suitable site for an airport.	06
	B	What are the Imaginary Surfaces? What is their Significance ? Explain with neat sketches the shape of each surface for different types of Airport.	06

Que. – 2	A	Give Sketches of the following. 1) Centralized system 2) Decentralized system 3) Nose Hangar 4) T- Hangar	05
	B	Explain the mechanism of Parking at Airport.	06

OR

Que. – 2	A	State the factors affect the size of an apron.	05
	B	What is the function of a hangar? What are its two types ?	06

Que. – 3	A	Enumerate the aims and functions of Airport Drainage System	06
	B	The longitudinal section of the runway provides the following data: Calculate the effective gradient of the runway.	06

End to end Runway (m)	Gradient (%)
0 to 400	+1
400 to 800	- 2
800 to 1200	+ 0.8
1200 to 1600	+ 0.2

Section – II

Que. – 4   **A**   A transition curve is to be used to join the ends of a 3.94° circular curve   06
with the straight. The length of the transition curve is 120 m. Workout
the shift and offsets at every 30 m interval. How will you set this
transition curve? Draw a figure showing layout and all the dimensions
of the curve.

         B   **Explain the following**   06
              1.   Write why rail transportation is important?
              2.   Write the advantages of Conning of Wheels.

<div align="center">OR</div>

Que. – 4   **A**   Find out the length of a curve having angle 3°. Super elevation and cant   06
deficiency permitted is 10 cm and 75 mm respectively. The speed on the
track is restricted to 80 kmph. Also design a transition curve taking
offsets at every 12 m.

         B   **Explain the following**   06
              1.   What is transportation? Enlist the modes of transportation.
              2.   Write the advantages of tilting of rails.

Que. – 5   **A**   If a railway track is to be designed for a track length of 650 m B.G half   06
straight and half curved, then how many numbers of sleepers will be
required? Sleeper density for straight track is M+5 and for curved track
is M+7.

         B   Write the Classification of rail signals. Also show the layout of   06
signal system at a station.

<div align="center">OR</div>

Que. – 5   **A**   What is superelevation? Write the formulas of superelevation for B.G.,   06
M. G., and N.G.

         B   **Define the following terms:**   06
              1.   Signal
              2.   Level Crossing
              3.   Track Circuiting
              4.   Turnouts
              5.   Switches
              6.   Hogged Rails

Que. – 6   **Answer the Following**
         A   Explain dock, jetty, wharves, ware house, transit shed and dolphins   06
         B   Explain breakwaters in detail.   03
         C   What is daily and periodic maintenance?   02

<div align="center">END OF PAPER</div>