Name:	
Enrolment No:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Programme Name: B. Tech. (Civil +ID) Semester : VI
Course Name: Transportation Engineering - II Time : 03 hrs
Course Code: CEEG332 Max. Marks : 100
Nos. of page(s) : 02
Instructions: Be brief and relevant. Use flow-charts, diagrams and tables, wherever necessary.

SECTION A

S. No.		Marks	CO
Q 1	Write a note on Divisional railways and its functions?	05	CO1
Q 2	Briefly explain different types of gradients used in Indian Railways.	05	CO2
Q 3	List down different types of surveys carried out as part of airport planning. Explain any two of them briefly.	05	CO3
Q 4	Explain the sequence of activities of passengers considered in design of passenger flow in airport terminal area building.	05	CO4

SECTION B

Q 5	Illustrate various components of a permanent way through a diagram with one brief function of each of these components. Explain the process of modernization in any one of the components? **OR** Explain the various functions of three important undertakings of Indian Railways.	10	CO1
Q 6	Explain how LWR is bringing about improvement in Indian Railway systems from technical and economical perspective?	10	CO1
Q 7	Calculate the actual length of the runway from the following data: Airport Elevation = R.L. 102, Airport Reference temperature = 32 degree celsius, Basic length of the runway = 607m, Highest point along the length = R.L 98.5, lowest point along the length = RL 95.2 Take suitable assumptions, as applicable.	10	CO4
Q 8	What are the different elements considered for geometric design of the Taxiway? Determine the radius of a taxiway for a supersonic aircraft to negotiate the curve at the turning speed of 65kmph. The wheel base is 32m and wheel tread is 7.5m. The Airport is of B Type as per ICAO. The value of coefficient of friction=0.13 and taxiway width is 22.5m.	10	CO4

	SECTION-C		
Q 9	What is the function of super-elevation in railways? Calculate the super-elevation and maximum permissible speed for a 2-degree BG transitioned curve on a high-speed route with a maximum sanctioned speed of 112 KM/h. The speed for calculating the equilibrium super-elevation as decided by the chief engineer is 85 KM/h and the booked speed of goods trains is 55 KM/h.	**20**	**CO2**
Q 10	Compare the advantages and disadvantages of Air transportation over Land-based transport like Highways and Railways. Analyze the future scope of Air transportation in a country like India. OR Describe the importance of planning for the development of an airport. List down the factors influencing the location of a new airport and explain five factors in detail.	**20**	**CO3**

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Programme Name: B. Tech. (Civil +ID) Semester : VIII
Course Name: Transportation Engineering-II Time : 03 hrs
Course Code: CEEG332 Max. Marks : 100
Nos. of page(s) : 02
Instructions: Be brief and relevant. Use flow-charts, diagrams and tables, wherever necessary.

SECTION A

S. No.		Marks	CO
Q 1	Describe the importance of capacity augmentation and electrification for the Indian Railways.	05	CO1
Q 2	Define following: (i) Grade compensation on curves (ii) Pusher gradient (iii) Momentum gradient	05	CO2
Q 3	Explain about five advantages of Air Transportation in India over road transportation.	05	CO3
Q 4	What are the basic requirements in a site selection process for a terminal building?	05	CO4

SECTION B

Q 5	What are the basic functions of a Rail sleeper? Differentiate between different types of rail sleepers based on their operational characteristics. **OR** How Indian Railways is planning to modernize the Railway Stations? Discuss the main functions of Indian Railways Station Development Corporation.	10	CO1
Q 6	Calculate the minimum theoretical length of LWR beyond which the central portion of rail would not be subjected to any thermal expansion, given the following data: Cross-sectional area of a 52 kg rail section = 66.15 cm^2, coefficient of thermal expansion of rail steel = 11.5 x 10^{-6} per ^{o}C, temperature variation = 32 ^{o}C, modulus of elasticity of rail steel = 2 x 10^6 kg/cm^2, sleeper spacing = 75 cm, and average restraining force per sleeper per rail = 330 kg	10	CO1
Q 7	Calculate the actual length of the runway from the following data: Airport Elevation = R.L. 105, Airport Reference temperature = 35 degree celsius, Basic length of the runway = 610m, Highest point along the length = R.L 99.0, lowest point along the length = RL 96.0 Take suitable assumptions, as applicable.	10	CO4
Q 8	What are the important parameters for comparison of different Aircraft parking	10	CO4

	systems? Draw neat diagrams to show difference between all the systems?		
	SECTION-C		
Q 9	What is the function of super-elevation in railways? Calculate the super-elevation and maximum permissible speed for a 3-degree BG transitioned curve on a high-speed route with a maximum sanctioned speed of 105 KM/h. The speed for calculating the equilibrium super-elevation is 85 KM/h and the booked speed of goods trains is 45 KM/h.	**20**	**CO2**
Q 10	Analyze the functions of different organizations working in the sector of Air transportation. Analyze the future scope of Air transportation in a country like India. OR Describe the importance of feasibility study for the development of an airport. Explain various factors influencing the location of a new airport and describe five factors in detail.	**20**	**CO3**