QPC: RN19BTECH675 AR 19 Reg. No

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Seventh Semester – Regular) Examinations, November – 2022

BPCCV7020 – Transportation Engineering – II

(Civil Engineering)

Time: 3 hrs Maximum: 70 Marks

Answer ALL Questions

The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions) **(1 x 10 = 10 Marks)**

Q.1. Answer ***ALL*** questions	[CO#]	[PO#]
a. The limiting value of cant excess for Broad Gauge is	CO 1	PO 2
(i) 55mm (ii) 65mm		
(iii) 75mm (iv) 100mm		
b. Regional Indian railways use different types of sleepers according to their	CO 1	PO 3
(i) availability (ii) economy		
(iii) suitability (iv) All of the above		
c. The weight of the rails depends upon	CO 2	PO 2
(i) gauge (ii) speed		
(iii) Spacing of sleepers (iv) All of the above		
d. The minimum super-elevation in rolling terrain in plains, is limited to	CO 2	PO 4
(i) 4% (ii) 5%		
(iii) 6% (iv) 7%		
e. which one of the following rail failures is caused by loose fish bolts at expansion joints?	CO 2	PO 3
(i) Crushed head (ii) Angular break		
(iii) Split head (iv) Transverse fissures		
f. Wing rails are provided	CO 3	PO 4
(i) Near tongue (ii) Near check rails		
(iii) Near stock rails (iv) In crossings		
g. Which signal gives permission to the train for leaving the platform	CO 3	PO 3
(i) Semaphore signal (ii) Warner signal		
(iii) Starter signal (iv) none		
h. Which is the following components of a semaphore signals	CO 3	PO 3
(i) Movable arm (ii) Spectacle frame		
(iii) Clank rod (iv) All of these		
i. Which signals are used in shunting operations for low-speed movement	CO 4	PO 2
(i) Disc signal (ii) Warner signal		
(iii) Starter signal (iv) semaphore		
j. Coning of wheels is provided	CO 4	PO 4
(i) to check lateral movement of wheels (ii) to avoid discomfort to passengers		
(iii) to avoid damage to inner faces of rails (iv) All the above.		

PART – B: (Short Answer Questions) **(2 x 10 = 20 Marks)**

Q.2. Answer ***ALL*** questions		[CO#]	[PO#]
a.	Write about the engineering surveys to be performed for railway line construction.	CO1	PO1
b.	What is Creep? What are its causes?	CO2	PO2
c.	What is degree of curve?	CO1	PO1
d.	What is a Transition curve, what are the different types?	CO1	PO2
e.	What are the objectives of Interlocking?	CO1	PO4
f.	What are the different types of special signals used in the railway stations?	CO2	PO2
g.	What essential purposes are served by Signalling and Interlocking?	CO3	PO4
h.	List out various objectives of signaling in railways.	CO3	PO1
i.	What is a natural harbour	CO4	PO1
j.	What is the use of quay walls	CO4	PO1

PART – C: (Long Answer Questions) **(10 x 4 = 40 Marks)**

Answer ***ALL*** questions		Marks	[CO#]	[PO#]
3. a.	What is Ballast? What are the different types and enumerate the requirements of Good ballast?	10	CO1	PO1
	(OR)			
b.	What are Sleepers? What are the advantages and disadvantages of Concrete sleepers?	10	CO1	PO1
4. a.	What are the limitations of cant deficiency? Discuss briefly about various types of transition curves used in railways.	5	CO1	PO2
b.	Write a note about - (i) Ruling gradient and (ii) Pusher gradient.	5	CO1	PO4
	(OR)			
c.	What do you understand negative super elevation?	5	CO3	PO4
d.	Discuss briefly about various types of transition curves used in railways.	5	CO3	PO1
5. a.	Write short notes on (i) Warner signal, (ii) Shunting signal (iii)Disc signal and (iv)routing signal.	10	CO4	PO1
	(OR)			
b.	Explain the working principle of centralized traffic control system and automatic train control system.	5	CO1	PO1
c.	Give the classification of Signals adopted in Railways	5	CO2	PO2
6. a.	Explain the factors for which a harbour engineer must have consideration while planning and designing a harbor.	10	CO1	PO1
	(OR)			
b.	How are the harbours classified?	5	CO1	PO4
c.	What are the requirements of a good port?	5	CO2	PO2

--- End of Paper ---