Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Winter 2022 - 23 Examination

Semester: 7 **Date: 08/10/2022**
Subject Code: 203104348 **Time: 10:30am to 1:00pm**
Subject Name: Metro System and Engineering **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 **Objective Type Questions** - (All are compulsory) (Each of one mark) **(15)**

1. Which type of gauge is used in metro?
(a) Narrow (b) standard gauge (c) Brodd gauge (d) meter gauge
2. Which of the following is not a component of the rail?
(a) Ballast (b) Foot (c) Web (d) Head
3. Width of standard gauge is?
(a) 1.4 m (b) 1.6m (c) 1.0 m (d) 0.76 m
4. The first metro train is started in which city?
(a) Delhi (b) Noida (c) Bombay (d) Kolkata
5. Design speed of metro is?
(a) 75 kmph (b) 80kmph (c) 100kmph (d) 85kmph
6. The traffic handling capacity of 750dc system is limited to _____PHPDT.
7. The outer body of metro rail is made up of _____
8. Full form of PHPDT is?
9 Length of driving motor car is _____
10. What is monorail?
11. Desirable Minimum radius of horizontal curve is ?
12. What is VAC?
13. Enlist the types of rail gauge.
14. Why ventilation is needed in tunnels?
15. The viaducts carrying the tracks will have a vertical clearance of minimum _____ above road level

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Write history of metro in India
B) Enlist name of Indian cities which have metro rail network
C) Explain the advantage and disadvantage of metro rail system
(D) What is sky train?

Q.3 A) Write a short note on delhi metro **(07)**
(B) Write short note on 1500 V DC Third Rail/ Overhead Catenary System **(08)**

OR

B) Write geometric parameters of vertical underground section **(08)**

Q.4 A) Write a short note on- Need for Ventilation and Air Conditioning **(07)**

OR

A) Write geometric standards of providing transition curve **(07)**
B) Write performance parameters of metro rail & explain velocity-time curve **(08)**