

## Unit 10 - Week 8

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## Week 8 Assignment 8

The due date for submitting this assignment has passed. **Due on 2020-11-11, 23:59 IST.**  
As per our records you have not submitted this assignment.

1) The 10 principles of NMT facilities planning are—Interconnected NMT Network, (1) \_\_\_\_\_, Bicycle friendliness, Walkability, Comfort, (2) \_\_\_\_\_, Safety, Security, NMT Wayfinding, Protection from Encroachment

a) (1) Vehicular Restriction; (2) Equity for the Poor  
b) (1) Pedestrianization; (2) Bicycle Affordability  
c) (1) Complete Streets; (2) Universal Accessibility  
d) None of the above

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: c)

2) What are “Complete Street” designs?

a) Designs to enable safe access for motorists and transit riders of all ages and abilities  
b) Designs to enable safe access for disabled pedestrians and bicyclists  
c) Designs to enable safe access for pedestrians and bicyclists of all ages and abilities  
d) Designs to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: d)

3) The 6 supportive principles of NMT facilities planning are—Informal Sector, (1) \_\_\_\_\_, Transit Priority, Parking management, (2) \_\_\_\_\_, Build cycling culture

a) (1) Adjustable FAR (Floor-Area Ratio); (2) Protection from Encroachment  
b) (1) Mixed Use; (2) Support Bicycle Industry  
c) (1) Complete Streets; (2) Universal Accessibility  
d) None of the above

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: b)

4) The footpath can be divided into three zones (1-3), starting from the zone farthest from the vehicular lane, as:

a) (1) Frontage Zone; (2) Furniture Zone; (3) Pedestrian Zone  
b) (1) Pedestrian Zone; (2) Frontage Zone; (3) Furniture Zone  
c) (1) Frontage Zone; (2) Pedestrian Zone; (3) Furniture Zone  
d) None of the above

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: c)

5) A 1.8 m wide footpath i.e. with no obstructions around a commercial area with a wall on one side, while the other side is barricaded by guardrail. The existing peak flow rate is 2000 pedestrians per 15 minute. Estimate the present Level of Service (LOS). What will be the widening requirement to maintain the service quality at LOS C (consider the maximum flow rate possible at LOS C)? Use the Pedestrian LOS standard and shy-away distances as defined by IndoHCM 2016.

(In ped/min/m)

LOS	Commercial	Institutional	Terminal	Recreational	Residential
A	≤ 13	≤ 13	≤ 15	≤ 12	≤ 16
B	> 13-19	> 13 - 19	> 15 - 26	> 12 - 20	> 16 - 23
C	> 19-30	> 19 - 27	> 26 - 32	> 20 - 32	> 23 - 34
D	> 30-47	> 27 - 36	> 32 - 68	> 32 - 54	> 34 - 47
E	> 41-69	> 36 - 42	> 68 - 78	> 54 - 91	> 47 - 59
F	Variable	Variable	Variable	Variable	Variable

Obstacle	Shy Distance (m)
Bench	0.3 - 0.5
Kerb (in case of Divided Carriageway)	0.1 - 0.2
Kerb (in case of Bidirectional)	0.2 - 0.4
Wall	0.4 - 0.6
Guardrails	0.4 - 0.6
Hawkers	0.3 - 0.5
Light Pole	0.8 - 1.1
Traffic Signs	0.6 - 0.8
Traffic Signal Poles and Boxes	0.9 - 1.2

a) Present LOS F; Extra widening required=2.56m  
b) Present LOS F; Extra widening required=3.64m  
c) Present LOS E; Extra widening required=2.56m  
d) Present LOS E; Extra widening required=3.56m

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: b)

6) Which of the following property entrance/s are considered improper design?

a) 1  
b) 2  
c) Both 1 and 3  
d) Both 1 and 2

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: d)

7) Which of the following IRC codes provide design standards for pedestrian facilities?

a) IRC 35: 1997  
b) IRC 15: 2015  
c) IRC 103: 2012  
d) IRC 93: 1985

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: c)

8) As per IRC codes, the spacing between each midblock crossing in a commercial or mixed use area is:

a) 80-150m  
b) 80-250m  
c) 80-350m  
d) None of the above

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: a)

9) As per the IRC codes, the minimum time gap ( $G_c$ ) equation for pedestrian signals can be broken up into three distinct component of time. They are:

a) Crossing time, consecutive time and start-up time  
b) Crossing time, waiting time and start-up time  
c) Crossing time, consecutive time and waiting time  
d) None of the above

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: a)

10) Calculate time gap for a platoon of 35 school children 7 in a row, consecutive time is 2 sec, width of crossing section is 10 m and walking speed of children 1.1 m/s, startup time is 3 sec.

(a) 17.1 s  
(b) 18.1 s  
(c) 19.1 s  
(d) 20.1 s

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: d)

11) A road 45 meter wide needs a pedestrian crossing with Refuge Island. It is regularly crossed by a platoon of 40 school children 5 in a row. These children crosses with a consecutive time of 3 sec, a startup time of 3.5 sec and walking speed of 1.0 m/s. To increase the comfort of the pedestrians while crossing, the city officials decide not to set the ped-green time of the pedestrian signal ( $G_c$ ) beyond 45 seconds. Determine the number and position of the refuge island on the cross section of the road. Keep a special note on the overall delay faced by pedestrians—as the number of refuge island increases the overall delay also increases.

(a) 1 traffic island at an interval of 22.5 m apart  
(b) 2 traffic island at an interval of 15 m apart  
(c) 3 traffic island at an interval of 11.25 m apart  
(d) None of the above

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: b)

12) As per IRC 11: 2015, the design speed of bicycles are:

(a) 3-5 km/hr  
(b) 5-15 km/hr  
(c) 15-17 km/hr  
(d) 20-25 km/hr

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: b)

13) A bicycle is to make a safe turn (without skidding) for a turn of radius of 25 meters. Determine the maximum speed (calculate to two decimal places) at which the bicycle can turn without skidding. Assume:

- $f_s = 0.25$
- $\theta = 15^\circ$
- $g = 9.81 \text{ m/s}^2$

(a) 2.10 m/sec  
(b) 3.06 m/sec  
(c) 4.06 m/sec  
(d) 5.06 m/sec

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: a)

14) What is the recommended slope as per IRC 11:2015 at Rail Over Bridges?

(a) 1:12-1:20  
(b) 1:20-1:30  
(c) 1:40-1:60  
(d) 1:30-1:50

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: c)

15) A tall building is located 30 m from the straight line of sight of a car (at point C) and 60 m from the straight line of sight of a bicyclist (at point A). Determine the sight distance available to the bicycle if the car at C is approaching the unsignalised intersection, which is 100 m away (i.e.  $d_0 = 100\text{m}$ ) at a given instant of time.

(a) 75 meters  
(b) 150 meters  
(c) 175 meters  
(d) 200 meters

a)  
 b)  
 c)  
 d)

No, the answer is incorrect.  
Score: 0  
Accepted Answers: a)