Registration No: | | | | | | | | | | |

Total Number of Pages: 03

B.PLAN
15BPLN306

3rd Semester Regular/Back Examination 2017-18
TRAFFIC & TRANSPORTATION PLANNING-I
BRANCH: B.Plan
Time: 3 Hours
Max Marks: 100
Q.CODE: B1051

Answer Question No.1 and 2 which are compulsory and any four from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions: *multiple type or dash fill up type*** **(2 x 10)**

a) In Tresaguet's construction giving a cross slop of_____ to the surface
(a) 1 in 36
(b) 1 in 40
(c) 1 in 45
(d) 1 in 50

b) In Nagpur road plan development allowance of_____ road length
(a) 5%
(b) 10%
(c) 15%
(d) 20%

c) The height of an object above the road surface which will be visible to eye level of driver ;as recommended by IRC is
(a) 1.5
(b) 1.2
(c) 1.3
(d) 0.16

d) The central road fund was formed on
(a) 1927
(b) 1928
(c) 1929
(d) 1934

e) The two plan formulae are also called as
(a) Nagpur roar plan
(b) Bombay road plan
(c) Luck now road plan
(d) Star and grid road plan

f) The stopping sight distance depends upon
(a) Reaction time of the driver
(b) Speed of the vehicle
(c) Efficiency of brakes
(d) all of the above

g) The parking load in vehicle-hour for a period of
a) 2hrs
(b) 4hrs
(c) 6hrs
(d) 12hrs

h) The factors are considered in evaluating the level of service
(a) speed
(b) travel time
(c) Economy
(d) all of the above

i) The instantaneous speed of a vehicle at a specified location is called
(a) Running speed
(b) Journey speed
(c) Spot speed
(d) Time mean speed

j) Which among the following is the fundamental equation of traffic flow? (q-flow, k-density, v-velocity)
(a) $q = k/v$
(b) $q = k \times v$
(c) $v = q \times k$
(d) $q = k^2 \times v$

Q2 **Answer the following questions: *Short answer type*** **(2 x 10)**

a) What do you mean by transportation?
b) What is the role of IRC?
c) Write down road classification?
d) Define SSD and OSD?
e) What is Level of service of road system?
f) What do you mean by traffic engineering?
g) Write types of conducting surveys?
h) What is spot speed and running speed?
i) Write about types of volume count?
j) Define PCU and its significance?

Q3 **a)** Explain the characteristics of different modes of transportation system? **(10)**
b) Write about after independence of Transport policies and programmers of road transport in India? **(5)**

Q4 **a)** What are the historical perspective of road development in India ? **(10)**
b) Derive social and political effects of transportation? **(5)**

Q5 **a)** Describe the key developments in Nagpur, Mumbai and Lucknow development plan ? **10)**

b) The following data were collected for planning the road development program of a backward district. **(5)**

i) Total area = 6300km^2
ii) Agricultural area= 2800km^2
iii) Length of railway track= 95km
iv) Length of metalled road= 282
v) Length of un metalled road= 350
vi) No. of towns or villages in different population ranges are below

Population	>5000	2001-5000	1001-2000	501-1000	<500
No. of villages and town	10	50	110	320	450

Calculate the additional length of mettaied and un mettalled roads for the road system on Nagpur road plan?

Q6 **a)** Briefly explain geometric design controls and criteria of highway?. **(10)**
b) Find minimum sight distance to avoid head-on collision of two cars approaching at 90 kmph and 60 kmph. Given t=2.5sec, f=0.7 and brake efficiency of 50 percent in either case **(5)**

Q7	**a)**	Explain about at grade and grade separation intersection and their certain situation, draw the types of alignment?	**(10)**
	b)	The speed of overtaking and overtaken vehicles are 70 and 40 kmph on a two way traffic road. If a acceleration of overtaking vehicle is 25km/hr per sec, Calculate safe overtaking sight distance, and minimum length of overtaking zone. ?	**(5)**
Q8	**a)**	Derive the capacity and level service of rural and urban road?	**(10)**
	b)	Explain concept of PCU ,and factors affecting PCU values?	**(5)**
Q9	**a)**	Describe method of parking studies and accidental studies and their causes ?	**(10)**
	b)	Write about OD studies and its application ?	**(5)**