Enrollment No.....

Bachelor of Engineering

Seventh Semester Main Examination, December 2021

Structural Design –II (Steel) [CE-703]

Branch-Civil

Time: 3:00 Hrs **Max Marks 70**

Note : (i) Attempt any five questions. All question carry equal marks.
(ii) Assume suitable data necessary and state them clearly.

Q.1 (a) Explain the failures of bolted joints ?
(b) Design a lap joint between the two plates of width 150mm, if the thickness of one plate is 12mm and the other is 10mm, the joint has to transfer a working load of 100kN the plates are Fe 410 grade. using bearing type bolts. .

Q.2 (a) Write any six features of structural steel ?
(b) An ISMC 250@ 298kg/m is used as a tie member to transfer a factored load of 800kN. the channel section is connected to a guest plate of 10mm thickness Design a fillet weld if the lap bight is limited to 300mm. prouide slots welds if required .

Q.3 (a) Write the help of suitable diagram Explain the concept of shear lag .
(b) Briefly describe the types of foundation used for columns ?

Q.4 (a) Distinguish between laterally restrained & unrestrained beanas
(b) What are the deflections considerations for the design of timber structures ?

Q.5 (a) Under what circumstances do we use slot welds and plug welds ?
(b) Explain block shear failures ?

Q.6 (a) What are the gain purpose of lacings & battens ?
(b) Illustrate the different elements of plate girder ?

Q.7 (a) What is lateral torsional buckling of beams ?
(b) Explain briefly classification of timber

Q.8 (a) What is shear lag ? How it can be reduced ?
(b) Differentiate between web buckling & web crippling

Enrollment No.....

Bachelor of Engineering
Seventh Semester Main Examination, December 2021
Traffic Engineering [CE-7042]
Branch-Civil

Time: 3:00 Hrs **Max Marks 70**

Note : (i) Attempt any five questions. All question carry equal marks.

(ii) Assume suitable data necessary and state them clearly.

Q.1 What are the various types of traffic markings commonly used?

Q.2 Explain in detailed of pedestrian signals with the help of neat diagram?

Q.3 List the method of methods of measurement for
(i) Speed & delay
(ii) Volume counts
(iii) O-D survey
And discuss in details the theory behind the method of moving observer method ?

Q.4 Write a note on
i) Practical capacity of road
ii) Level of service

Q.5 Write a detailed note on " Mass transportation"

Q.6 Classifies the different types of traffic signs and mention the general objectives of each types of sign Explain them with neat & sketch?

Q.7 How traffic volume survey is carried out ? Explain presentation of data Obtained?

Q.8 Explain traffic rotary .what are thro its advantages and limitations? Discuss with relations to Indian road conditions?

OR

Explain the design steps in design of is isolated fixed cost time traffic light signals as Per IRC guidelines?

Enrollment No.....

Bachelor of Engineering
Seventh Semester Main Examination, December-2021
Transportation Engineering-II [CE-701]
Branch-Civil

Time: 3:00 Hrs **Max Marks 70**

Note : (i) Attempt any five questions. All question carry equal marks.
(ii) Assume suitable data necessary and state them clearly.

Q.1 (a) Explain the twenty year road plan.
(b) Write down the different modes of highway financing.

Q.2 (a) What do you understand by super elevation derive an expression of it.
(b) Write down the detail notes on selection of road alignment.

Q.3 Explain the design consideration for spacing of.
(a) Expression joints.
(b) Contraction joint with and with out reinforcement.

Q.4 (a) What are the general cases of pavement failures.
(b) Write a note on maintenance management system.

Q.5 Briefly outline the IRC recommendations for determining the thickness of cement concrete pavement.

Q.6 (a) Explain the term seal coat.
(b) Write down the short notes on radius of relative stiffness.

Q.7 (a) Explain the following term:-
(i) Traffic- way
(ii) Taxi-way
(b) Explain the Runway with neat sketch.

Q.8 Write short note on :-
i) WBM pavement
ii) MUd pavement
iii) Bituminous pavement
iv) Runway marking

Enrollment No.....

Bachelor of Engineering
Seventh Semester Main Examination, December-2021
Geotechnical Engineering-II [CE-702]
Branch-Civil

Time: 3:00 Hrs **Max Marks 70**

Note : (i) Attempt any five questions. All question carry equal marks.
(ii) Assume suitable data necessary and state them clearly.

Q.1 (a) Define netuttimate Bearing capacity and gross safe bearing capacity.
(b) Write down the limitation of Terzaghi's analysis.

Q.2 (a) Write a brief note on " group action" in piles
(b) Write a brief note on negative skin friction in piles

Q.3 (a) Differentiate between compaction and consolidation.
(b) Explain various types of Geo-Synthetics also discuss functions of Geo-Synthetics.

Q.4 (a) What is difference between shallow and deep function.
(b) What are the various methods of site exploration. Explain the wash boring method in detail.

Q.5 (a) What do you mean by Soil stabilization? Write about chemical and Bitumen stabilization.
(b) What do you understand by 'Zero air voids line' in the soil compaction.

Q.6 (a) A rectangular footing 2m x 3m rest on a C-Ø soil with its base at 1.5m below the ground surface calculate the safe bearing capacity using a factor of safety 3 on
(i) Net ultimate bearing capacity &
(ii) Ultimate bearing capacity

The soil has following parameters
$Y = 18\ kn/m^3$ $C = 10\ kn/m^2$
$\emptyset = 30^o$ use Tarzaghis analysis
(b) What are the various characteristics of general shear failure local shear failure and punching shear failure.

Q.7 (a) Draw neat sketches of different sheet piles.
(b) Write various criteria as per IS code for foundation of reciprocation machine.

Q.8 (a) State and explain various types of samples and samplers.
(b) Discuss various characters of expansive and collapsible soils.