Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Building Planning & Architecture [CE-301]
Branch-Civil

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

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

Q.1 (a) Write short note on the various type of footing.
(b) Describe various types of staircase and also draw with neat sketches.

Q.2 (a) What do you understand by NBC? Give its recommendation for various elements of residential building.
(b) Write Short Note On Various Types Of Hinges Used For Doors And Window.

Q.3 (a) What Are the Principal of Architecture? Explain The World Hierarchy In Brief.
(b) Discuss The Role Of Colour In Architecture.

Q.4 (a) Write Short Notes:
(i) Building by Laws (ii) Positive Space
(b) What Do You Understand By Pictorial Drawing?

Q.5 (a) Write Short Note:
(i) Storage Tank (ii) Water Requirement For Building
(b) What do you mean By Fire Fighting and Thermal Insulation System in Multistoried Building?

Q.6 (a) Explain Principles of architectural composition.
(b) Discuss The Provision For Urban Growth.

Q.7 (a) Explain introduction to computer aided design and drafting.
(b) Explain How Do You Achieve Thermal Insulation Of Roofs.

Q.8 (a) Explain Building bye-law.
(b) Write Short Note:
(i) Negative Space (ii) Comfort Factors

Enrolment No……

Bachelor of Engineering

Third Semester Main Examination, Dec-2020

Strength of Material (CE302T)

Branch-CE

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

Note: (i) Attempt any five questions.

(ii) Answer should be precise & to be point only.

(iii) Assume suitable data if necessary & state them clearly

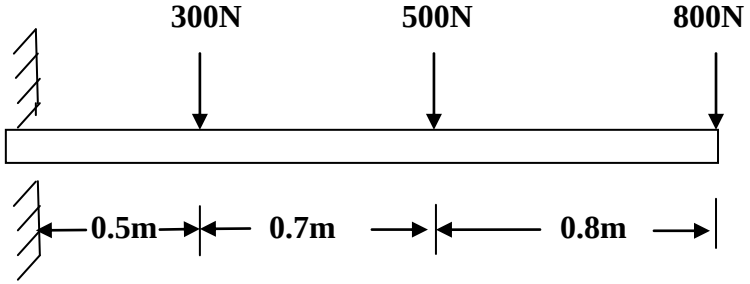
Q.1 **(a) Define the terms.** **7**

(i) Elasticity (ii) Young's Modulus (iii) Modulus of Rigidity

(b) The tensile stresses at a point across two mutually perpendicular planes are 120 N/mm^2 and 60 N/mm^2. Determine the normal, tangential and Resultant stresses on a plane inclined at 30^o to the axis of the minor stress. **7**

Q.2 **(a) What are the different types of beams? Explain each with neat sketches.** **7**

(b) A cantilever beam of length 2 m carries the point load as shown in fig. Draw the shear force and binding moment diagram for the cantilever beam. **7**



Q.3 **(a) What do you mean by simple bending or plane bending? What are the assumptions made in the theory of simple bending?**

7

(b) A steel plate of width 120 mm and of thickness 20 mm is bent into a circular arc of radius 10m. Determine the maximum stress induced and the bending moment which will produce the maximum stress.
Take E=2×10^5 N/mm^2. **7**

Q.4 **(a) Prove that the deflection at the centre of a simply supported beam, carrying a point load at the centre is given by.** **7**

$$Yc = \frac{WL3}{48EI}$$ **Where, W=Point Load**

L=Length of Beam.

(b) A solid shift of diameter 80 mm is subjected to a twisting of 8 MN nm and a bending moment of 5 MN mm at a point. **7**
(i) Principle stresses and
(ii) Position of the plane on which they act.

Q.5(A) **(i) What is Macaulay's method? Where is it used?**
(ii) What is moment area method? Where is it conveniently used? **7**

(b) Define the terms:- **7**
Torsion, Torsional Rigidity, Polar moment of inertia.

Q.6 **(a) Prove that the torque transmitted by a solid shaft when subjected to torsion is given by** **7**

$$T = \frac{\pi}{16} \tau D^3$$

Where, D=Dia of solid shaft, and

τ=Max shear stress

(b) Define Shear force and bending moment. **7**

Q.7 **(a) What are the different types of load acting on a beam. Explain with neat sketches.** **7**

(b) What is the procedure of finding thermal stresses in a composite bar? 7

Q.8 (a) Explain the terms: - 9

(i) Neutral axis

(ii) Section modulus and

(iii) Moment of resistance

(b) The safe stress , for a hollow steel column which carries an axial load of 2.1×10^3KN is 125MN/m^2. If the external diameter of the column is 30 cm, determine the internal diameter. 5

Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Advance Surveying & Remote Sensing (CE-303)
Branch- CE

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

Note : (i) Attempt any five questions. All question carry equal marks.
(ii) Answer should be precise & to be point only.
(iii) Assume suitable data if necessary & state them clearly

Q.1 **(a) Write down the principle of compass & difference between prismatic compass & surveyor compass.**
(b) Discuss various system of bearing. How bearing can be converted from one system to another system.

Q.2 **(a) Explain with line diagram principle and working of digital level. Write down the features of digital theodalite.**
(b) What do you mean by total station? What are the different fundamental parameter of total station?

Q.3 **(a) Two triangular station A & B are 60 Km apart and have elevation 250 m & 300 m. respectively fine the minimum height of signal required at B so that the line of side may not pass near the ground then 2 m. the ground may be assumed to have a uniform elevation of 200 m.**
(b) What is the significance of base line in trangulation survey what corrections are applied to measured base line?

Q.4 **(a) Differentiate b/w the GIS & GPS.**
(b) What is the working principle & construction of geodimeter?

Q.5 **(a) What are the different operation involve in plan tabling? Explain orientation of plane table in detail.**

(b) What do you understand by force bearing & back bearing of a line? Explain its relationship.

Q.6 **(a) Describe the detail remote sensing & GIS application in urban growth analysis.**

(b) Write short note on the following-(Any 4)

(a) Classification of leveling

(b) Plan survey & geodetic survey

(c) Total station instrument

(d) Satellite station

(e) Electro optical

Q.7 **(a) Discuss various operation in carring out the chain survexing.**

(b) Write down the working principle of theodalite?

Q.8 **(a) Explain the construction & working digital planimeter?**

(b) Difference b/w Digital level & Digital theodalite.

Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Geology (CE-304T)
Branch-CE

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

Note: (i) Attempt any five questions.
(ii) Answer should be precise & to be point only.

Q.1 (a) Discuss the importance of geology in the field of civil engineering?
(b) Explain different types of Zones of earth on the basis of seismic investigation?

Q.2 (a) Differentiate between the symmetrical and asymmetrical folds.
(b) What are faults? Describe parts and classification of faults with neat sketches?

Q.3 (a) What are Igneous Rocks, Sedimentary Rocks and Metamorphic rocks give example of each rock. Explain formation of sedimentary rock.
(b) Explain the following terms.
(i) Hardness of minerals
(ii) Symmetry elements of crystals
(iii) Soil Profile
(iv) Earthquake waves

Q.4 (a) What are mineral's? Write various physical properties of minerals which helps in its identification. Discuss in detail any five of them.
(b) Write short note's on the following. (Any 4)
(i) Petrology
(ii) Physical Geology
(iii) Spheroidal weathering
(iv) Plate tectonics
(v) Segregation

Q.5 (a) Explain the following terms (Any 4)

(i) Poisson's ratio
(ii) Texture and structure
(iii) Crushing strength
(iv) Siphon spillway
(v) Shaft spillway

(b) Discuss various geological characteristics that need to be considered for selection of sites for dams?

Q.6 (a) Describe the classification of folds in brief. Discuss the importance of folds in the field of civil engineering.

(b) Write short notes on following.

(i) Sub-surface water (ii) Hydrological cycle

(iii) Cleavage of minerals (iv) Mohr's scale of hardness

Q.7 (a) Define an unconformity. Discuss their types and importance in civil engineering.

(b) Define weathering and erosion? Describe various types of physical and chemical weathering.

Q.8 (a) Explain ground water exploration method?

(b) Describe the geological classification of soils?

Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Material Science [ES-220]
Branch-Civil

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

Note: (i) Attempt any five questions. All question carry equal marks.
(ii) Answer should be precise & to be point only.
(iii) Assume suitable data if necessary & state them clearly

Q.1 Describe the process of blasting.

Q.2 Explain what is meant by terms ceramics & clay.

Q.3 How are refractory materials classified?

Q.4 Discuss low quality and high quality refractory materials.

Q.5 What are the raw materials used for the preparation of sand lime bricks.

Q.6 Write a critical note on the concrete blocks.

Q.7 Describe the manufacturing of sand lime bricks.

Q.8 How is brick earth classified?

Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Communication Skills (HU220T)
Branch-CE/EE/EC/CS/IT/ME

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

Note : (i) Attempt any five questions. All questions carry equal marks.
(ii) Answer should be precise & to be point only.
(iii) Assume suitable data if necessary & state them clearly

Q.1 **(a) What is communication? Explain importance of communication in detail?**
(b) What are different barriers to communication and how will you eliminate them?

Q.2 **(a) How are non-verbal communication in an online environment?**
(b) What do you mean by communication styles? Explain.

Q.3 **(a) Define cycle of communication. Discuss the role of feedback in the cycle of communication.**
(b) What do you mean by encoding & decoding of the message? What is the role of source and receiver in communication?

Q.4 **(a) What are some examples of non-verbal signals that we convey in communication with other peoples?**
(b) What is the importance of studying non-verbal communication?

Q.5 **(a) Discuss the level of communication.**
(b) What are the different challenges in communication?

Q.6 **(a) What is paralinguistic features of communication.**
(b) What is volume in paralinguistics?

Q.7 **(a) What is proxemics in non-verbal communication?**
(b) Discuss the features importance to make an oral presentation effective.

Q.8 **Write short notes on-** **(Marks=14)**
(a) Feedback
(b) Semantic barriers
(c) Voice modulation
(d) Gesture.