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 Types Of Footing.
(b) Describe Various Types Of Staircases And Also Draw Their Neat Sketches

Q.2 (a) What Do You Understand By NBC? Give Its Recommendations 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 :
1. Building By Laws 2. 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 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 Materials [CE-302]
Branch-Civil

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 Derive a relation between young's modulus of elasticity(E) and modulus of rigidity(C).

Q.2 A horizontal cantilever 5m long carries a point load of 1kN at the free end and a U.D.L. of 0.5kN/m over a length of 3m from the free end. Draw the shear force and bending moment diagram for the beam

Q.3 A 250mm (depth) × 150mm (width) rectangular beam is subjected to maximum bending moment of 750 kNm. Determine the maximum stress in the beam.

Q.4 A circular bar made of cast iron is to resist an occasional torque of 2.2kNm acting in transverse plane. If the allowable stress in compression, tension and shear are 100MN/m2, 35MN/m2 and 50MN/m2 respectively. Take C=40GN/m2 and find:-
1)Diameter of bar
2)Angle of twist under the applied torque per meter length of bar.

Q.5 Write down the classifications of beams with neat sketch.

Q.6 What is Mohr's circle? Write down the stepwise procedure for construction of Mohr's circle for two perpendicular direct stresses with state of simple shear.

Q.7 Determine the section modulus for following:-Rectangular section of width 'b' and depth 'd'. Circular section of diameter 'd'

Q.8 (a) What are the different types of load acting on a beam. Explain with neat sketchs.
(b) What is the procedure of finding thermal stresses in a composite bar?

Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Advance Surveying & Remote Sensing [CE-303]
Branch- Civil

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

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

Q.1 (a) Write about the modelling highway alignment studies using GIS.
(b) What do you understand by GIS?

Q.2 (a) Explain in detail about the digital image processing.
(b) Explain in details EDM method.

Q.3 (a) What is total station define its components with diagram?
(b) What is remote sensing?

Q.4 (a) What is principal of plan table surveying? Also list out and briefly explain instrument s used in plan table surveying.
(b) What is the principle of Surveying? Explain any one with diagram.

Q.5 (a) Define and explain working principal of Digital Plan meter.
(b) What is the advance survey? Which equipment can be used?

Q.6 (a) What do you understand by Precise Traversing and Baseline measurement explains.
(b) Explain the world 'Traverse' with two examples & types.

Q.7 (a) What do you understand GPS Surveying? How it is helpful in civil engineering work.
(b) Write short notes of the following:
(i) GIS (ii) Control Surveying

Q.8 (a) What is remote sensing? Explain the process of data collection store and transfer under remote sensing.
(b) Write short notes of the following: (i) Theodolite (ii) Total station

Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Geology [CE-304]
Branch-Civil

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

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

Q.1 (a) Describe Briefly The Structure Of The Atmosphere Around earth.
(b)Write A Critical Essay On The Origin Of The Earth's.

Q.2 (a) Explain With The Help Of Neat Sketches Various Features Of Glacial Deposition.
(b) Define Rock? Explain its classification?

Q.3 (a) Water Is The Greatest Modifier Of Surface Topography. Explain its statement.
(b)Write An Essay On Weathering Of Rock And Significance In const.

Q.4 (a) Explain Morphological Notes On Glacial Deposits.
(b) What are the types Of Fluvial Deposite.

Q.5 (a) Explain Primary And Secondary Structure.
(b) Write A Critical Essay On The ''Role Of Geology engineering.

Q.6 (a) Discuss Engineering Problems Of Marine Erosion And Deposition.How These Processes Differ From Those Of Stream.
(b) What Is Products Of Weathering.

Q.7 (a) What is sedimentary rocks? Explain with two examples.

(b) Explain stratified rocks & unstratified rocks?

Q.8 (a) Discuss the Statement Critically & geology.
(b) Explain chemical classification in rock formations?

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 (a) Describe the process of blasting.
(b) What is stone quarrying?

Q.2 (a) Explain what is meant by the terms ceramics and clay.
(b) What are the materials used in civil engineering works?

Q.3 (a) How are refractory materials classified?
(b) Explain naturals materials.

Q.4 (a) Discuss low quality and high quality refractory materials.
(b) What is a crystallographic defect?

Q.5 (a) What are the raw materials used for the preparation of sand lime bricks.
(b) Explain stress & strain with diagram.

Q.6 (a) Write a critical note on the concrete blocks.
(b) What is deep & high temperature alloys? (Write 3 differences)

Q.7 (a) Describe the manufacturing of sand lime bricks
(b) Explain cast irons, non-ferrous alloys, steel heat treatment.

Q.8 (a) How is brick earth classified?
(b) What are the tests on bricks? Explain anyone.

Enrollment No…….

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Communication Skills [HU220]
Branch-CE/EX/EC/CSE/IT/ME

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

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

Q.1 What do you mean by Communication? Describe it.

Q.2 Explain process of communication with diagram.

Q.3 What are upward and downward communication?

Q.4 Differentiate one way and two way communication.

Q.5 List out challenges in communication.

Q.6 Explain barriers to communication.

Q.7 Write a short note on Articles.

Q.8 What are parts of speech? Explain with suitable examples.

Enrollment No……

Bachelor of Engineering
Third Semester Main Examination, Dec-2020
Mathematics-III [MA-220]
Branch-EE/EC/CS/IT

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

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

Q.1 (a) State and prove Cauchy's theorem.
(b) Show that the function $e^x(cosy + isiny)$ is analytic and find its derivative.

Q.2 (a) Using Cauchy's integral formula prove that : $\int_C^3 \frac{e^{2z}}{(z+1)^4} dz = \frac{8\pi e^{-2}}{3} i$, where C is the circle $|z| = 3$.
(b) Find the imaginary part of the analytic function whose real part is $x^3 - 3xy^2 + 3x^2 - 3y^2$.

Q.3 (a) Find the real root of the equations $x^3 - 9x + 1 = 0$ by the method of false position.
(b) Apply Newton Raphson method to solve $3x = cosx + 1$.

Q.4 (a) Using Newton's forward Interpolation formula, find the value of $f(1.6)$,if

x:	1	1.4	1.8	2.2
y:	3.49	4.82	5.96	6.5

(b) Solve the following system by Gauss elimination method

$$6x_1 + 3x_2 + 2x_3 = 6$$
$$6x_1 + 4x_2 + 3x_3 = 0$$
$$20x_1 + 15x_2 + 12x_3 = 0$$

Q.5 (a) Apply Lagrange's formula to find the value of x when f(x) = 0 given that

x:	30	34	38	42
$f(x)$:	−30	−13	3	18

(b) Solve initial value problem $\frac{dy}{dx} = 1 + xy^2$, $y(0)$=1 for $x = 0.4, 0.5$ by using Milne's method when it is given that

x:	0.1	0.2	0.3
y:	1.105	1.223	1.355

Q.6 (a) Solve the equation $\frac{dy}{dx} = x + y$ with initial condition $y(0) = 1$ by Runge kutta rule from $x = 0$ to $x = 0.4$ with $h = 0.1$

(b) Evaluate $\int_{0.5}^{0.7} x^{1/2} e^{-x} dx$ approximately by using a suitable formula.

Q.7 (a) Solve the following by Euler's modified method, the equation $\frac{dy}{dx} + \log(x + y), y(0) = 2$ at $x = 1.2$ and 1.4 with $h = 0.2$

(b) Use picard's method to approximate y when $x = 0.2$ given that $y = 1$ when $x = 0$ and $\frac{dy}{dx} = x - y$

Q.8 (a) Find the z Transform of Sinak, k7,0

(b) Solve the following by Gauss Seidel iteration Method

$$10x + y + z = 12$$

$$2x + 10y + z = 13$$

$$2x + 2y + 10z = 14$$