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Department of Civil Engineering
II Year IV Sem
4CE2-01: AEM-II
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

Q1. The first four moments of the distribution about the value 5 of the variable are 2. 20, 40 and 50. Find the mean.	BLT-4	CO-1
Q2. State Baye's theorem.	BLT-1	CO-1
Q3. The bag contains 2 one-rupee coins and 3 50-paise coins. A person is allowed to draw two coins indiscriminately. Find the expected value of the draw.	BLT-4	CO-1
Q4. Write a short note on: (i) Skewness (ii) Kurtosis	BLT-6	CO-1
Q5. From a lot of 25 items containing 5 defectives, a sample of 4 items is drawn at random. Find the expected number of defiles in the sample.	BLT-4	CO-1

ASSIGNMENT-II

Q1. Define the null hypothesis and alternative hypothesis.	BLT-1	CO-2
Q2. State the principle of least squares.	BLT-1	CO-2
Q3. Write a short note on sampling.	BLT-6	CO-2
Q4. Write The equations of lines of regression.	BLT-6	CO-2
Q5. A bag has 2 white and 1 black ball, while the other has 2 white and 2 black balls. A ball is drawn from each bag. Find the chance that there is at least one white ball drawn.	BLT-4	CO-2

ASSIGNMENT-III

Q1. 5. A random variable X has the following probability distribution: x 0 1 2 3 4 5 ń 7 P(x) () k ?k 2k ?k k' 2 k' 7 k'+k Find k.	BLT-4	CO-3
Q2. In a bolt factory machines A, B and C manufacture respectively 25%, 35% and 40% of the total bolts. Of their output 5, 4 and 2 percent are respectively defective bolts. A bolt is drawn at random from the product and is found to be defective, what is the probability that it was manufactured by machines A, B and C?	BLT-4	CO-3
Q3. A and B take turns throwing two dice, the first to throw 9 will be awarded a prize. If A has the first turn, show that their chances of winning are in the ratio of 9:8.	BLT-4	CO-3
Q4. State and prove Chebyshev's inequality.	BLT-6	CO-3
Q5. Find the mean and the standard deviation of the Binomial distribution.	BLT-4	CO-3

*BLT: BLT shows the **Bloom's taxonomy** levels.

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II Year IV Sem
4CE2-01: AEM-II
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ASSIGNMENT-IV

Q1. Two populations have the mean, but the S.D. of one is twice that of the other. Show that in samples-, each of size 500, drawn under simple random condition, the difference of the means will in all probability not exceed 0.3r. where is the smaller S.D.	BLT-1	CO-4
Q2. The means of two single large samples of 1000 and 2000 members are 67.S inches and 68.0 inches respectively. Can the samples be regarded as drawn from the same population with a standard deviation of 2.5 inches (rest at 5% LOS).	BLT-1	CO-4
Q3. Write a short note on: (i) Skewness (ii) Kurtosis	BLT-1	CO-4
Q4. Show that i.e. coefficient of correlation lies between z1 or |r| ; Si 1	BLT-1	CO-4
Q5. Random samples drawn from two countries gave the following data relating to the height of adult males: 		Country A	Country B	 |---|---|---| | Mean height(in inches) | 67.42 | 67 25 | | S.D.(in inches) | 2.58 | 2.50 | | No. in samples | 1000 | 1200 |	BLT-1	CO-4

ASSIGNMENT-V

Q1. In a certain factory turning out blades, there is a small chance of 0.002 for any blade to be defective. The blades are supplied in packets of 10. Using Poisson distribution, find the number of packets containing no defective, one defective and two defective blades respectively in a consignment of 10,000 packets.	BLT-4	CO-5
Q2. State the principle of least squares.	BLT-1	CO-5
Q3. Write The equations of lines of regression.	BLT-6	CO-5
Q4. Define the null hypothesis and alternative hypothesis.	BLT-1	CO-5
Q5. Write a short note on sampling.	BLT-6	CO-5

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Department of Civil Engineering
II Year IV Sem
4CE1-02: Technical Communication
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

Q1. Mention two objectives of Technical Communication.	BLT-1	CO-1
Q2. What do you understand by the term "Technical Document"?	BLT-1	CO-1
Q3. Distinguish between Technical and Non-Technical Communication.	BLT-3	CO-1
Q4. What do you mean by Information Development?	BLT-1	CO-1
Q5. Mention the different types of Technical Articles.	BLT-1	CO-1

ASSIGNMENT-II

Q1. Suggest two methods of enhancing Listening Communication Skills.	BLT-2	CO-2
Q2. Name different types of Technical Reports.	BLT-1	CO-2
Q3. What does the Structure of Technical Articles stand for?	BLT-1	CO-2
Q4. Describe how to write a Technical Project Proposal in a step-by-step manner.	BLT-2	CO-2
Q5. What is the importance of Communication Skills? Discuss in detail.	BLT-1	CO-2

ASSIGNMENT-III

Q1. Mention any two ways to improve the Linguistic Abilities of Engineering students.	BLT-1	CO-3
Q2. Define the term "Technical disclosure".	BLT-1	CO-3
Q3. What is the importance of communication skills? Discuss in detail.	BLT-1	CO-3
Q4. Write an E-mail to announce and congratulate your team as it has achieved the quarterly goal of reaching $5,00,000 in sales. Invent all relevant information.	BLT-6	CO-3
Q5. Suggest some tried and tested techniques on how to revise a technical text.	BLT-2	CO-3

ASSIGNMENT-IV

Q1. What is Technical Communication? Discuss the different forms of communication.	BLT-2	CO-4
Q2. What do you mean by minutes of meeting?	BLT-1	CO-4
Q3. What 8 things should the minutes of the meeting include?	BLT-1	CO-4
Q4. Write a note on Information Design.	BLT-6	CO-4
Q5. Define note-making.	BLT-1	CO-4

ASSIGNMENT-V

Q1. What are the different types of resumes?	BLT-1	CO-5
Q2. What is the process of technical writing?	BLT-1	CO-5
Q3. Write about the challenges in the process of Technical Communication in detail.	BLT-6	CO-5
Q4. Elucidate the structure and format of technical articles.	BLT-2	CO-5
Q5. Define Technical Communication and its importance in the life of an Engineering Professional.	BLT-1	CO-5

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Department of Civil Engineering
II Year IV Sem

4CE3-04: Basic Electronics for Civil Engineering Applications
Note: Each Assignment of Maximum marks 10. All question carries equal marks.

ASSIGNMENT-I

Q1. Write the difference between Analog and Digital signals.	BLT-6	CO-1
Q2. Draw the logic diagram of the Exclusive NOR gate using NOR gates only.	BLT-4	CO-1
Q3. What is flip-flop? Explain the construction and working of the Master-slave JK flip-flop.	BLT-1	CO-1
Q4. Convert the octal number $(273.453)_8$ into decimal.	BLT-4	CO-1
Q5. Simplify the expression : ((AB'+ABC)'+A(B+AB'))'	BLT-4	CO-1

ASSIGNMENT-II

Q1. Explain the function of JK Flip Flop. Write characteristic equations also.	BLT-2	CO-2
Q2. Describe the action of the PN junction diode under forward and reverse bias. Explain how a barrier potential is developed at the PN junction.	BLT-2	CO-2
Q3. What is PN Junction? Show diode in forward bias condition.	BLT-1	CO-2
Q4. Draw input and output characteristics of BJT in CB configuration.	BLT-4	CO-2
Q5. Simplify: A+A.B'+A'.B	BLT-4	CO-2

ASSIGNMENT-III

Q1. Write a short note on the Control survey using GNSS.	BLT-6	CO-3
Q2. Define the Gaussian Error curve and probable error.	BLT-1	CO-3
Q3. What is Probable error?	BLT-1	CO-3
Q4. Write a short note on the Control survey using GNSS.	BLT-6	CO-3
Q5. Explain the difference between accuracy and precision with a suitable example.	BLT-3	CO-3

ASSIGNMENT-IV

Q1. List various types of transducers.	BLT-1	CO-4
Q2. What do you mean by Active and Passive Transducers?	BLT-1	CO-4
Q3. Draw and explain the construction and working principle of LVDT.	BLT-4	CO-4
Q4. Differentiate between : A. Transducers and Inverse Transducers B. Primary and Secondary Transducers	BLT-3	CO-4

ASSIGNMENT-V

Q1. Discuss the application of optical and microwave remote sensing techniques used in Civil Engineering.	BLT-2	CO-5
Q2. Draw a diagram of the satellite earth orbit.	BLT-4	CO-5
Q3. Discuss types of Image enhancement in detail.	BLT-2	CO-5
Q4. What do you mean by spatial filter?	BLT-1	CO-5
Q5. Explain in detail the Accuracy Assessment.	BLT-2	CO-5

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Department of Civil Engineering
II Year IV Sem
4CE4-05: Strength of Materials
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

Q1. What do you mean by stress and strain?	BLT-1	CO-1
Q2. Explain the mechanical properties of the material.	BLT-2	CO-1
Q3. Explain the concept of material.	BLT-2	CO-1
Q4. Explain the stress-strain curve for mild steel	BLT-2	CO-1

ASSIGNMENT-II

Q1. What is the Two-dimensional stress system?	BLT-1	CO-2
Q2. Differentiate between shear stress and normal stress.	BLT-3	CO-2
Q3. What do you mean by Mohr's circle & its application?	BLT-1	CO-2
Q4. Explain the theories of failures.	BLT-2	CO-2

ASSIGNMENT-III

Q1. Explain the Theory of simple bending.	BLT-2	CO-3
Q2. Explain Combined direct and bending stress.	BLT-2	CO-3
Q3. Obtain the relationship between bending intensity, shear force and bending moment.	BLT-6	CO-3
Q4. Draw SFD and BMD for a simply supported beam having UDL over the whole span.	BLT-4	CO-3
Q5. Derive the bending equation.	BLT-6	CO-3

ASSIGNMENT-IV

Q1. Explain the Bending of Beams: Bending moment.	BLT-2	CO-4
Q2. Explain the Shear force and Axial thrust diagrams for statically determinate beams.	BLT-2	CO-4
Q3. Explain the concept types of loads and moments, Point of Contraflexure.	BLT-2	CO-4
Q4. Obtain the desired values and sketch the shear stress distribution for an I-section.	BLT-4	CO-4
Q5. A beam of a rectangular section is to support a load of 20KN over a length of 4m. If the depth of the section is to be twice the breadth and the stress in the beam is not to exceed 60 MPa. Find the dimension of the cross-section.	BLT-4	CO-4

ASSIGNMENT-V

Q1. Explain the Elementary concepts of torsion.	BLT-2	CO-5
Q2. Explain the concept of Torsion.	BLT-2	CO-5
Q3. Explain the concept of angle of twist, power transmitted by a shaft.	BLT-2	CO-5
Q4. Explain the concept of combined bending and torsion.	BLT-2	CO-5

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Department of Civil Engineering
II Year IV Sem

4CE4-06: Hydraulics Engineering
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

Q1. Derive the expression of any two dimensionless numbers.	BLT-6	CO-1
Q2. What is the law of dimensional homogeneity?	BLT-1	CO-1
Q.3. Using the Buckingham π theorem, find the formula for the radius of a black hole in terms of the black hole's mass m, the gravitational constant G, and the speed of light cc.	BLT-4	CO-1
Q.4. What are the various types of similarities? Are these similarities truly attainable? If not, why?	BLT-1	CO-1
Q.5. A 7.2 m high and 15 m long spillway discharges 94 m/s of water under a head of 2.0 m. if a 1:9 scale model of this spillway is to be constructed, determine the model dimension, head over the spillway model and model discharge. If the model experiences a force of 7500 N, determine the force on the prototype.	BLT-4	CO-1

ASSIGNMENT-II

Q.1. Explain why pressure gradient in the direction of flow is equal to the shear gradient in the direction normal to the direction of flow. Derive a generalized equation for all types of flow and boundary conditions for the above statement.	BLT-6	CO-2
Q.2. A total of 12 litres/sec of oil is pumped through two pipes in parallel, one 12 cm in diameter and the other is 10 cm in diameter, both pipes are 1000m long' The specific gravity of the oil is 0.97 and the kinematic viscosity 9.0 cm2/s. Calculate the flow rate through each pipe and the power of the pump.	BLT-4	CO-2
Q.3. Derive an expression for pressure drop down a pipe in terms of friction factor.	BLT-6	CO-2
Q.4. In a pipe of diameter l00mm, carrying water, the velocities at the pipe Centre and 30 mm from the pipe centre are found to be 2 .5 m/s and 2.2 m/s respectively. Find the wall shearing stress.	BLT-4	CO-2

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Department of Civil Engineering
II Year IV Sem

4CE4-06: Hydraulics Engineering
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-III

Q.1. Consider a circular ring of radius, r and thickness, dr. Derive a common expression for velocity distribution for smooth and rough pipe.	BLT-6	CO-3
Q.2. State and explain the Geometric properties of Rectangular, Triangular, Trapezoidal and Circular channels with suitable examples.	BLT-2	CO-3
Q.3. A triangular gutter whose sides include an angle of 60" conveys water at a uniform depth of 300 mm. If the bed gradient is 1 in 150 find the discharge. Take Chezy's constant C-55 $m^{1/2}$s.	BLT-4	CO-3
Q.4. A canal has a bottom width of 4 m and sides with a slope of 1 vertical to l.5 horizontal. The depth of water is 1.0 m when the discharge is 4 m^3/s.	BLT-1	CO-3

ASSIGNMENT-IV

Q1. Derive an expression for force exerted by a jet of water on a moving semi-circular plate in the direction of the jet when the jet strikes at the centre of the semi-circular plate.	BLT-6	CO-4
Q2. A jet of water with a velocity of 40 m/s strikes a curved vane which moves with a velocity of 20 m/s. The jet makes an angle of 30" in the direction of motion of the vane at the inlet and leaves at 90o to the direction of motion of the vane at the outlet. Determine the vane angle at the outlet, if water enters and leaves without shock and also determine efficiency.	BLT-4	CO-4
Q3. Why hydraulic jump is used as an energy dissipater at the toe of the spillway of a dam? Discuss different ways of obtaining hydraulic jump.	BLT-2	CO-4
Q4. Calculate the discharge in m3 is when the depth of flow is l.2 m.	BLT-4	CO-4

ASSIGNMENT-V

Q.1. Derive an expression for the minimum starting speed of a centrifugal pump.	BLT-6	CO-5
Q.2. Define the priming of a centrifugal pump and how it is done.	BLT-1	CO-5
Q.3. Draw a neat sketch of a Kaplan turbine with its parts and explain its working.	BLT-4	CO-5
Q.4. Obtain an expression for the work done by the impeller of the centrifugal pump on water per second per unit weight of water.	BLT-6	CO-5
Q.5. A Kaplan turbine runner is to be designed to develop 10MW. The net head is 0.6m, the speed ratio:2.09, the flow ratio=0.68, the overall efficiency is 80% and the diameter of the boss is 1/3 diameter of the runner. Find the diameter of the runner, speed and specific speed of the turbine.	BLT-4	CO-5

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Department of Civil Engineering
II Year IV Sem
4CE4-07: Building Planning
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

Q1. Explain types of buildings.	BLT-2	CO-1
Q2. Explain the criteria for location and sit selection.	BLT-2	CO-1
Q3. Draw a site plan and explain it.	BLT-4	CO-1
Q4. Draw a residential plan with Vaastu Shastra.	BLT-4	CO-1
Q5. Explain Vaastu Shastra.	BLT-2	CO-1

ASSIGNMENT-II

Q1. Explain Different methods of drawing sun charts.	BLT-2	CO-2
Q2. Explain Sun Shading Device.	BLT-2	CO-2
Q3. Explain the design of louvres.	BLT-2	CO-2
Q4. Explain elements of climate.	BLT-2	CO-2
Q5. Explain the climate zones of India.	BLT-2	CO-2

ASSIGNMENT-III

Q1. Explain Thermal comfort in a residential building.	BLT-2	CO-3
Q2. Explain Bioclimatic Chart.	BLT-2	CO-3
Q3. Explain factors affecting orientation.	BLT-2	CO-3
Q4. Explain Orientation criteria.	BLT-2	CO-3
Q5. Explain tropical climate.	BLT-2	CO-3

ASSIGNMENT-IV

Q1. Why building bye-laws is important?	BLT-1	CO-4
Q2. Explain the building bye-laws of Jaipur	BLT-2	CO-4
Q3. What is building line explain?	BLT-1	CO-4
Q4. Explain aspects and prospects.	BLT-2	CO-4
Q5. Explain factors affecting planning.	BLT-2	CO-4

ASSIGNMENT-V

Q1. Explain Vaastu Shastra.	BLT-2	CO-5
Q2. Explain grouping and Roominess.	BLT-2	CO-5
Q3. Draw an Office planning with Vaastu Shastra.	BLT-4	CO-5
Q4. Draw a residential plan with Vaastu Shastra.	BLT-4	CO-5
Q5. What is building line explain?	BLT-1	CO-5

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Department of Civil Engineering
II Year IV Sem

4CE4-08: Concrete Technology
Note: Each Assignment of Maximum marks10.All question carries equal marks.

ASSIGNMENT-I

Q1. What are the raw materials used to produce cement and discuss the heat of hydration?	BLT-2	CO-1
Q2. What is the soundness of the cement and how is it tested?	BLT-1	CO-1
Q3. Discuss the role of water cement ratio and how it affects the workability of concrete.	BLT-2	CO-1
Q4. Describe the type of bogous compound.	BLT-2	CO-1
Q5. List and describe the factors affecting of workability of concrete.	BLT-1	CO-1

ASSIGNMENT-II

Q1. Explain the following terms: i) Workability ii) Water cement ratio iii) Segregation iv) Bleeding v) Viscosity vi) Grade of concrete	BLT-2	CO-2
Q2. Write the types of aggregate based on shape and size.	BLT-6	CO-2
Q3. What do you mean by Slump of concrete? Explain the slump test of concrete.	BLT-1	CO-2
Q4. Explain any four-testing procedure for concrete and aggregate.	BLT-2	CO-2
Q5. Explain the Durability of concrete and the factors affecting the durability of concrete.	BLT-2	CO-2

ASSIGNMENT-III

Q1. What is the bulking of cement?	BLT-1	CO-3
Q2. List the factors affecting of workability of concrete.	BLT-1	CO-3
Q3. Write the types of aggregate based on shape and size.	BLT-6	CO-3
Q4. Describe the properties of fresh and hardened concrete.	BLT-2	CO-3
Q5. What is the soundness of the cement and how is it tested?	BLT-1	CO-3

ASSIGNMENT-IV

Q1. Explain any Three testing procedures for concrete and aggregate.	BLT-2	CO-4
Q2. What are the raw materials used to produce cement and discuss the heat of hydration?	BLT-1	CO-4
Q3. Explain the following terms: i) Workability ii) Water cement ratio iii) Segregation iv) Bleeding v) Viscosity vi) Grade of concrete	BLT-2	CO-4
Q4. What do you mean by aggregate? Briefly describe their classification.	BLT-1	CO-4

ASSIGNMENT-V

Q1. What is the soundness of the cement and how is it tested?	BLT-1	CO-5
Q2. What is meant by the workability of concrete? How is it tested in the field and the laboratory?	BLT-1	CO-5
Q3. Define creep. What are its advantages and disadvantages?	BLT-1	CO-5
Q4. Describe the properties of fresh and hardened concrete.	BLT-2	CO-5
Q5. Describe the type of bogus compound and how it affects cement.	BLT-2	CO-5

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