

No. of Printed Pages : 4

Roll No.

180731/170731/

120731/30731

3rd Sem.

Subject : Fluid Mechanics

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note:Objective type questions. All questions are compulsory (10x1=10)

- Q.1 Fluids offer no resistance to the change of their _____ (CO-1)
- Q.2 Specific gravity of a fluid is the ratio between its _____ to that of pure water at 4°C. (CO-2)
- Q.3 The pressure energy per unit weight is known as _____. (CO-3)
- Q.4 Vacuum pressure is also called _____ (CO-4)
- Q.5 Flow of liquid through a tapered pipe is _____ flow. (CO-5)
- Q.6 A mouthpiece is a short length of pipe connected to _____ (CO-6)
- Q.7 Water hammer is caused by _____ closure of valve. (CO-7)

(1)

180731/170731/
120731/30731

Q.8 In a laminar flow, Reynold number is _____. (CO-7)

Q.9 The bed level of channel is always _____. (CO-8)

Q.10 The device used to increase the pressure energy of a fluid are called _____. (CO-9)

SECTION-B

Note:Very short answer type questions. Attempt any ten questions out of twelve questions. 10x2=20

- Q.11 Define hydraulics. (CO-1)
- Q.12 Define compressibility (CO-2)
- Q.13 Define pressure of a liquid. (CO-3)
- Q.14 Mention any three commonly used mechanical gauges. (CO-4)
- Q.15 Mention the assumptions made in derivation of Bernoulli's theorem. (CO-5)
- Q.16 What is a Orifice meter. (CO-6)
- Q.17 Define knocking. (CO-7)
- Q.18 Define adhesion. (CO-2)
- Q.19 How do you define a most economical channel section. (CO-8)
- Q.20 Write down functions of hydraulic pump. (CO-9)

(2)

180731/170731/
120731/30731

Q.21 Define simple manometers. (CO-4)

Q.22 Define non uniform flow. (CO-5)

SECTION-C

Note: Short answer type questions. Attempt any five questions out of ten questions. 5x8=40

Q.23 State Newton's law of viscosity (CO-2)

Q.24 Explain the working of hydraulic press with the help of a neat sketch. (CO-3)

Q.25 Write a short note on Bourdoux tube pressure gauge. (CO-4)

Q.26 In a pipe of 100 mm diameter, water is flowing with a mean velocity of 3 m/s and a gauge pressure of 300 KN/m². Determine the total head, if the pipe is 10m above the datum line. Neglect friction.

Q.27 Name the major and minor losses of head during flow through a pipeline. (CO-7)

Q.28 Give the comparison between flow through pipe and flow through an open channel. (CO-8)

Q.29 Draw a neat sketch of venturimeter and explain it. (CO-6)

Q.30 Find the loss of head due to friction in a pipe of 400 mm dia and 2 Km long. The velocity of

water in the pipe 1.5m/second. Take $f=0.005$.

(CO-7)

Q.31 Differentiate between centrifugal and reciprocating pump. (CO-9)

Q.32 Explain water hammer. (CO-7)

SECTION-D

Note: Long answer type questions. Attempt any three questions out of four questions. 3x10=30

Q.33 Calculate the discharge in litres/sec through a pipe of diameter 20 cm in a length of 700m. The difference of pressure heads between the two ends of a pipe is 2.2m. Take $F=0.007$ (CO-7)

Q.34 A rectangular channel is 2m deep and 7m wide. Find the discharge through the channel, when it runs full. Take slope of bed as 1 in 1000 and chezy's constant as 55. (CO-8)

Q.35 A triangular plate of base width 1.5m and height 2m lies immersed in water with apex downwards. The base of plate is 1m below and parallel to free water surface work out total pressure on plate and locate the position of centre of pressure with respect to plate centroid

Q.36 Explain the working of a single acting reciprocating pump. (CO-9)

(3) 180731/170731/
120731/30731

(7440) (4) 180731/170731/
120731/30731

No. of Printed Pages : 4

Roll No.

180732/120732

3rd Sem.

Subject : STRUCTURAL MECHANICS

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Objectives questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

- Q.1 Gold is a _____ material. (CO-1)
- Q.2 The unit of strain is _____ (CO-2)
- Q.3 Bending moment is maximum at a section where shear force is _____ (CO-3)
- Q.4 Radius of gyration is given by $k = \frac{I}{A}$ (CO-4)
- Q.5 Bending Stresses are also known as _____ (CO-5)
- Q.6 The Shear stress varies along the _____ of the beam. (CO-6)
- Q.7 Slope and deflection are both zero in cantilever beam at _____ end. (CO-7)
- Q.8 Euler's formula is applicable for _____ columns only. (CO-8)

(1)

180732/120732

Q.9 The member of a framed structure subjected to tension is called a _____ (CO-9)

Q.10 The unit of stress in SI system is _____ (CO-2)

SECTION-B

Note: Very Short answer type questions. Attempt any ten questions out of twelve questions. 10x2=20

- Q.11 Define continuous beam (CO-3)
- Q.12 Define modulus of Elasticity. (CO-2)
- Q.13 Draw a stress strain diagram for mild steel showing prominent points. (CO-1)
- Q.14 State theorem of perpendicular axis. (CO-4)
- Q.15 Define Neutral Axis. (CO-5)
- Q.16 What is shear stress. (CO-6)
- Q.17 Define slope and deflection of a beam. (CO-7)
- Q.18 Define critical load. (CO-8)
- Q.19 Define perfect frame. (CO-9)
- Q.20 Define tensile stress. (CO-2)
- Q.21 Name type of supports of beam. (CO-3)
- Q.22 Draw a S.F.D and B.M.D for a cantilever beam carrying a point load acting at a distance l_1 from fixed end. (CO-3)

(2)

180732/120732

SECTION-C

Note: Short answer type questions. Attempt any five questions out of ten questions. 5x8=40

Q.23 Define Hardness, Toughness and ductility. (CO-1)

Q.24 Explain Temperature stresses and strains. (CO-2)

Q.25 Define load and explain type of loads. (CO-3)

Q.26 A cantilever AB of length 4m carries a U.D.L of 3KN/m over a whole length and a point load of 4KN at free end . Draw S.F.D and B.M.D(CO-3)

Q.27 Write the units of (CO-4)

(i) Moment of Inertia

(ii) Radius of gyration

(iii) Section Modulus

Q.28 What are assumptions made in theory of simple Bending. (CO-5)

Q.29 Draw a shear stress distribution diagram for circular section and T-section. (CO-6)

Q.30 A cantilever beam 6m long carries a point load of 25KN at free end. The width and depth of beam and 200mm and 300mm respectively. Calculate max. slope and deflection $E=2 \times 10^5 \text{N/mm}^2$ (CO-7)

(3) 180732/120732

Q.31 Explain equivalent length of column, slenderness ratio and buckling load. (CO-8)

Q.32 Define concept of a perfect, redundant and deficient frame (CO-9)

SECTION-D

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.33 A wooden tie is 75mm wide, 150mm deep and 2.5m long. It is subjected to an axial pull of 40KN. The extension of members is found to be 0.80mm find young's modulus of tie material. (CO-2)

Q.34 A simply supported beam is carrying a U.D.L of 2KN/m over a length of 3m from the right end. The length of beam is 6m. Draw S.F.D and B.M.D and also calculate max. Bending moment at section. (CO-3)

Q.35 Determine moment of Inertia of T-section (100mmx100mmx20mm) about Horizontal and vertical axis passing through C.G of section (CO-4)

Q.36 Explain mechanical properties of materials. (CO-1)

(**Note:** Course outcome/CO is for office use only)

(6800) (4) 180732/120732

No. of Printed Pages : 4

Roll No.

180733/170733/
120733/30733

3rd Sem. / Civil

Subject : Surveying - 1

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note:Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

- Q.1 The basic principle of surveying is to work from to part. (CO-1)
- Q.2 The alidade provides.....in the plane table surveying. (CO-5)
- Q.3 The B.M fixed at the end of day's work is called the..... (CO-4)
- Q.4 Length of one link is.....cm. (CO-2)
- Q.5 W.C.B are measured with.....compass. (CO-3)
- Q.6 The bearing of a line in the direction of progress of survey is called..... (CO-3)
- Q.7 Line Ranger is used for (CO-2)
- Q.8 The line of collimation and axis of telescope should..... (CO-4)

(1) 180733/170733/
120733/30733

Q.9 The plane table surveying is suitable for scale mapping (CO-5)

Q.10 The curvature of earth is ignored in (CO-1)

SECTION-B

Note:Very Short answer type questions. Attempt any ten parts 10x2=20

- Q.11 Define plane surveying. (CO-1)
- Q.12 Define Ranging. (CO-2)
- Q.13 Define Orientation in Plane Table Surveying. (CO-5)
- Q.14 Define Base Line. (CO-2)
- Q.15 Define true Meridian. (CO-3)
- Q.16 Define Line of collimation. (CO-4)
- Q.17 Define back Bearing. (CO-3)
- Q.18 What is Local Attraction. (CO-3)
- Q.19 What is Focussing. (CO-4)
- Q.20 Name the two methods of chaining on a sloping ground. (CO-2)
- Q.21 What is the use of trough compass in Plane Table Surveying. (CO-5)
- Q.22 What is change point. (CO-4)

(2) 180733/170733/
120733/30733

SECTION-C

Note: Short answer type questions. Attempt any five questions. 5x8=40

- Q.23 Define curvature and Refraction. (CO-4)
- Q.24 Write the instrument error's Plane Table Surveying. (CO-5)
- Q.25 Explain which types of measurement are taken on plane surveying. (CO-1)
- Q.26 Differentiate between whole circle bearing system and reduced bearing system. (CO-3)
- Q.27 Explain the intersection method of Plane Table Surveying. (CO-5)
- Q.28 Define Fly levelling and check levelling. (CO-4)
- Q.29 The length of a survey line measured with 30 metre chain was found to be 720m. Find the true length of line if the chain used was 5cm too short. (CO-2)
- Q.30 Name the various equipments used in Plane Table Surveying. (CO-5)
- Q.31 Differentiate between collimation method and Rise and Fall Method. (CO-4)
- Q.32 Define Magnetic Declination and Local Attraction. (CO-3)

(3) 180733/170733/
120733/30733

SECTION-D

Note: Long answer type questions. Attempt any three questions. 3x10=30

- Q.33 What do you mean by Bench Mark? Explain various types of Bench Mark. (CO-4)
- Q.34 Explain the errors in Plane Table Surveying. (CO-5)
- Q.35 The following staff readings were observed during the operation. Calculate the Reduced levels of all the points by Height of instrument method. First reading was taken on a B.M of R.L 240. 500m Apply usual check. (CO-4)

Station	B.S	I.S	F.S
1	1.470		
2		1.285	
3	2.515		1.585
4		1.070	
5	0.590		1.325
6		1.415	
7			2.435

- Q.36 The following are the observed bearing of a closed traverse. Calculate the interior angles of the traverse.

Line	F.B	B.B
AB	N 50° 45'E	S 50° 45'W
BC	S 65° 15' E	N 65° 15' W
CD	S 15° 45' W	N 15° 45' E
DA	N 81° 0' W	S 81° 0' E

(Note: Course outcome/CO is for office use only)

(7220) (4) 180733/170733/
120733/30733

No. of Printed Pages : 4

Roll No.

180734/170734/

120734/30734

3rd Sem. / Civil

Subject : Construction Material

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note:Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

- Q.1 Sand stone is an example of _____ rock (CO-1)
- Q.2 The colour of brick depends upon the amount of _____ present in the clay. (CO-2)
- Q.3 Le-Chatlier apparatus is used to determine _____. (CO-3)
- Q.4 The central part of a tree is called _____.(CO-4)
- Q.5 The liquid part of the paint is called _____. (CO-5)
- Q.6 The metals having iron as their main constituent are known as _____. (CO-6)

(1)

180734/170734/

120734/30734

Q.7 Polythene is an example of _____ (CO-7)

Q.8 The initial setting of cement is caused due to _____. (CO-3)

Q.9 The process of mixing clay, water and other ingredients to make bricks is known as _____. (CO-2)

Q.10 The wood generally used for railway sleepers is _____. (CO-4)

SECTION-B

Note:Very Short answer type questions. Attempt any ten parts 10x2=20

- Q.11 What is heat of hydration? (CO-3)
- Q.12 Define Moulding of bricks. (CO-2)
- Q.13 What is base? (CO-5)
- Q.14 What is cork? (CO-6)
- Q.15 Define Silicious rocks. (CO-1)
- Q.16 What is efflorescence? (CO-2)
- Q.17 What do you mean by electrical seasoning? (CO-4)

(2)

180734/170734/

120734/30734

- Q.18 What do you understand by ductility? (CO-6)
- Q.19 What is Thermoplastic? (CO-7)
- Q.20 What is consistency of cement? (CO-3)
- Q.21 What is final setting time of cement? (CO-3)
- Q.22 Write difference between hard wood and soft wood (CO-4)

SECTION-C

Note: Short answer type questions. Attempt any five questions out of ten. 5x8=40

- Q.23 Explain classification of rocks in brief. (CO-1)
- Q.24 Describe in brief the ingredients of cement. (CO-3)
- Q.25 Describe the classification of trees briefly (CO-4)
- Q.26 Write the requirements of Ideal or good paint. (CO-5)
- Q.27 Write uses of Cast Iron. (CO-6)
- Q.28 Write short note on decay of timber. (CO-4)

(3) 180734/170734/
120734/30734

- Q.29 What are the guidelines should be followed during storage of cement? (CO-3)
- Q.30 Write short note on Lamination Board. (CO-7)
- Q.31 What are common timbers used in India? (CO-4)
- Q.32 Define types of tiles in brief. (CO-2)

SECTION-D

Note: Long answer type questions. Attempt any three questions. 3x10=30

- Q.33 Write the names of types of cement. Explain any four. (CO-3)
- Q.34 Explain Bull's Trench Kiln with diagram. (CO-2)
- Q.35 Explain the methods of seasoning of timber in detail. (CO-4)
- Q.36 What are the different types of varnishes? Explain in brief. (CO-5)

(**Note:** Course outcome/CO is for office use only)

(6360) (4) 180734/170734/
120734/30734

No. of Printed Pages : 4

Roll No.

180735/170735/

120735/30735

3rd Sem. / Civil

Subject : Building Construction

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note:Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

- Q.1 the lowest part of structure which transmits the load to the soil is (CO-2)
- Q.2 The construction of a temporary structure required to support an unsafe structure, is called..... (CO-3)
- Q.3 Partition wall is a type of.....bearing wall. (CO-3)
- Q.4 The brick laid with its length parallel to the face of the wall is called as..... (CO-4)
- Q.5 The pitch of stair should never exceed (CO-7)
- Q.6 Define terrazzo floor. (CO-7)
- Q.7 Define pitch of a sloping roof. (CO-8)

(1)

180735/170735/

120735/30735

Q.8 The width of landing should be the width of stair. (CO-7)

Q.9 The process of filling up nail holes, cracks etc. with putty is known as (CO-9)

Q.10 The highest point on the extrados is called (CO-6)

SECTION-B

Note:Very Short answer type questions. Attempt any ten parts 10x2=20

- Q.11 Define sills and lintels. (CO-6)
- Q.12 Write three requirements of a good building. (CO-1)
- Q.13 Define well foundation . (CO-2)
- Q.14 Enlist two different types of mortar. (CO-4)
- Q.15 Define quoin and frog. (CO-4)
- Q.16 Define stretcher and header in brick works. (CO-4)
- Q.17 Define rubble masonry. (CO-5)
- Q.18 Draw cross-section of lintel with chajja. (CO-6)
- Q.19 Write any two purposes of doors and windows. (CO-7)
- Q.20 Write the significance of providing Damp Proof Course. (CO-10)

(2)

180735/170735/

120735/30735

Q.21 Write any two requirements of a good roof.
(CO-8)

Q.22 Write any two requirements of a good plaster.
(CO-4)

SECTION-C

Note: Short answer type questions. Attempt any five questions out of ten. 5x8=40

Q.23 Explain in detail three different types of caissons.
(CO-2)

Q.24 Define scaffolding. Explain any two types of scaffolding.
(CO-3)

Q.25 Define bond in brick masonry. Explain English bond in detail with neat sketch.
(CO-4)

Q.26 Write five requirements of a good D.P.C.
(CO-10)

Q.27 State the suitability of wooden, plastic and aluminium doors in a building.
(CO-7)

Q.28 Enlist five different types of arches. Explain any two of them in detail.
(CO-6)

Q.29 Enlist various types of mortar used in construction industry and explain any two in detail.
(CO-4)

Q.30 Enlist classification of deep foundation. Explain friction piles with neat sketch.
(CO-2)

Q.31 Define shoring, Timbering and de-watering in the earthwork.
(CO-2)

Q.32 Draw English bond for corner and T-joint in case of one brick wall.
(CO-4)

SECTION-D

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.33 Suggest different approaches to control termite in existing building.
(CO-11)

Q.34 Define pointing . Enlist the different methods of pointing and explain atleast six of them in detail.
(CO-9)

Q.35 Write four different classifications of stair case on the basis of material used and explain their significance in detail.
(CO-7)

Q.36 Define floor. Write the importance of floor in the building. Explain in detail five different types of floor finishes.
(CO-7)

(Note: Course outcome/CO is for office use only)

(3) 180735/170735/
120735/30735

(6520) (4) 180735/170735/
120735/30735

No. of Printed Pages : 4
Roll No.

180736/170736

3rd Sem. / Civil

Subject : Building Drawing

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note:Objective type questions. Attempts any ten parts. (10x2=10)

(Course Outcome/CO)

- Q.1 Define Basement. (CO-1)
- Q.2 Define Hold Fast. (CO-5)
- Q.3 Size of Traditional Brick is..... (CO-6)
- Q.4 Define Segmental Arch. (CO-8)
- Q.5 Define Orientation. (CO-2)
- Q.6 Define D.P.C. (CO-3)

(1) 180736/170736

Q.7 Define Queen closer. (CO-6)

Q.8 List the name any four fixtures/fittings for doors. (CO-5)

Q.9 Define Foundation. (CO-3)

Q.10 Define span. (CO-8)

Q.11 Define horn. (CO-5)

Q.12 Define Terrazzo Flooring. (CO-1)

SECTION-B

Note:Very Short answer type questions. Attempt any three questions. 3x10=30

Q.13 Draw the section of Cement Concrete Floor, Assume data. (CO-2)

Q.14 Draw the section of simple spread foundation with plinth projection by applying thumb rule method of 200mm thick wall. (CO-3)

(2) 180736/170736

Q.15 Draw the front elevation and sectional plan of flush door. (CO-5)

Q.16 Draw the plan of English Bond of 300 mm thick wall. (CO-6)

SECTION-C

Note: Short answer type questions. Attempt any two questions. 2x25=50

Q.17 Draw a section of basement of D.P.C in ordinary soil. Assume Suitable data. (CO-3)

Q.18 Draw the front elevation, plan of a Double leaf panelled and Glazed door 1200mm X 2100mm. Assume Suitable data. (CO-5)

Q.19 Draw the plan and front elevation from the given line plan with following specifications

thickness of all walls = 300mm

Plinth height = 400mm

C.conc. flooring (1:2:4) and R.C.C slab roofing

Assume any missing data (CO-4)

Room 5.0m x 4.0 m	Room 3.0m x 4.0m
VERANDAH 2.0m WIDE	Bath Wc 1.5m x 2.0m

(3) 180736/170736

(5600)

(4)

180736/170736

No. of Printed Pages : 4

Roll No.

170332

3rd Sem. /Mech. Engg., Auto Engg., Civil Engg.
Subject : Applied Mechanics

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note:Objective type questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

- Q.1 Define dynamics. (CO-1)
Q.2 Define Kinematics. (CO-1)
Q.3 Define deformable body. (CO-1)
Q.4 Definition of force follows from Newton's _____ law of motion. (CO-2)
Q.5 Define resolution of force. (CO-2)
Q.6 Define moment. (CO-3)
Q.7 Write the types of dynamics friction. (CO-4)
Q.8 Define centroid. (CO-6)
Q.9 Define efficiency of the machine. (CO-7)
Q.10 Write the law of an ideal machine. (CO-7)

(1)

170332

SECTION-B

Note:Very Short answer type questions. Attempt any ten parts 10x2=20

- Q.11 Define vector quantity; write the name of any two. (CO-1)
Q.12 Name and explain four systems of units. (CO-1)
Q.13 State Lami's theorem. (CO-2)
Q.14 What do you mean by Free body Diagram. (CO-3)
Q.15 State Varignon's theorem. (CO-3)
Q.16 Write the law of moments. (CO-3)
Q.17 What is compound lever? (CO-3)
Q.18 Write the characteristic of force of friction. (CO-4)
Q.19 Define angle of repose. (CO-5)
Q.20 Establish a relationship between efficiency, mechanical advantage and velocity ration. (CO-7)
Q.21 What do you understand by the term reversibility of the machine? (CO-7)
Q.22 Name any two methods of finding centre of gravity of regular bodies. (CO-6)

(2)

170332

SECTION-C

Note: Short answer type questions. Attempt any five questions. $5 \times 8 = 40$

- Q.23 Write any five differences between mass and weight. (CO-1)
- Q.24 What are the various characteristics of a force? (CO-2)
- Q.25 Explain the principle of transmissibility of the forces. (CO-3)
- Q.26 What do you mean by parallel forces? Discuss their classification. (CO-3)
- Q.27 What is the difference between simple lever and compound lever? (CO-5)
- Q.28 What is a couple? State the characteristic of the couple. (CO-3)
- Q.29 What are the factors on which the force of friction depends? (CO-4)
- Q.30 Explain how the centre of gravity of an irregular body is found. (CO-6)
- Q.31 Discuss briefly about worm and worm wheel. (CO-7)
- Q.32 What is the effect of friction in machines? In how many ways it can be expressed in terms of velocity ratio. (CO-7)

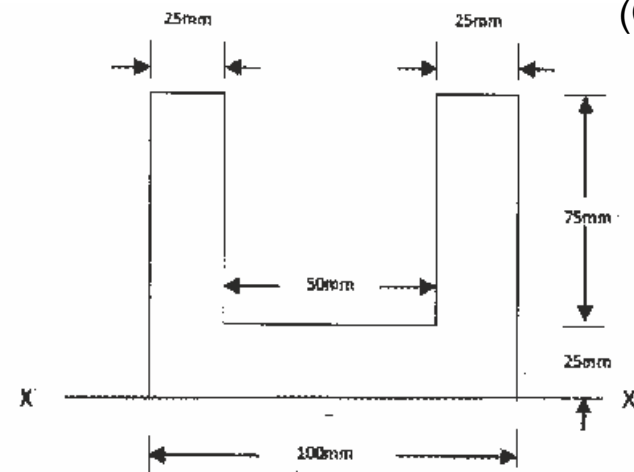
SECTION-D

Note: Long answer type questions. Attempt any three questions. $3 \times 10 = 30$

- Q.33 Three forces keep a particle in equilibrium, one act towards East, another towards North-west

and the third towards South. If the first force be 50N, find the other two forces. (CO-2)

- Q.34 A plane is inclined to the horizontal. The work done by the least force in dragging a weight of 60N up the plane through a vertical distance of 0.80m is 80 Nm. The co-efficient of friction is 0.2 find the angle of inclination of the plane to the horizontal. (CO-5)
- Q.35 Find the centre of gravity of the channel as shown in figure. (CO-6)



- Q.36 An effort of 200N is applied to a lifting machine to raise a load, out of which 10% is lost in friction. If the velocity ratio of the machine is 10, then determine (i) Load lifted and (ii) efficiency. (CO-7)

(Note: Course outcome/CO is for office use only)