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Enrollment No.....



Faculty of Engineering
End Sem (Even) Examination May-2022
FT3CO09 Building Planning & Machine Drawing

Programme: B.Tech.

Branch/Specialisation: FT

Duration: 3 Hrs.

Maximum Marks: 60

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d.

- Q.1 i. The foundations are placed below ground level, to increase- **1**
(a) Strength (b) Workability
(c) Stability of structure (d) All of these
- ii. The platform at the end of a series of steps, is known as- **1**
(a) Platform (b) Relief (c) Rest (d) Landing
- iii. While designing a stair, the product of rise and going is **1**
approximately kept equal to-
(a) 350 (b) 420 (c) 450 (d) 500
- iv. Pick up the correct statement from the following: **1**
(a) Louvered door is generally provided in bathrooms
(b) Flush door is generally provided in dining room
(c) Revolving door is generally provided in cinema halls
(d) Sliding door is generally provided in show room
- v. For effective drainage, the finished surface of flat roof should have **1**
a minimum slope of-
(a) 1 in 20 (b) 1 to 50 (c) 1 in 10 (d) 1 in 5
- vi. The ceiling height of a building is- **1**
(a) Between ceiling and ground level
(b) Between ceiling and floor level
(c) Up to roof above ground level
(d) Up to ceiling from the ground level

P.T.O.

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- vii. _____ is equal to the differences of the two limits of size of the part. **1**
 (a) Tolerance (b) Low limit
 (c) High limit (d) Design size
- viii. A positive allowance will always result in a _____ fit. **1**
 (a) Clearance (b) Interference
 (c) Both (a) and (b) (d) Any of these
- ix. Leftmost element on a welding symbol is- **1**
 (a) Weld length (b) Weld symbol
 (c) Weld size (d) Blank length
- x. Length of bolt is specified as measured from- **1**
 (a) Top of head to end of bolt
 (b) Bottom of head to end of bolt
 (c) Where the threads start to end
 (d) Bottom of head to start of threads
- Q.2 Attempt any two: **5**
- i. List different types of foundations? Explain any two with neat sketches. **5**
- ii. Explain the classification of buildings into groups according to NBC with example. **5**
- iii. Enlist the types of stairs. Explain dog-legged staircase with the neat sketch. **5**
- Q.3 i. What are the aims of building drainage in a residential building? **4**
 ii. Write down the classification of traps according to shape and use with diagrams. **6**
- OR iii. Explain types of sanitary appliances with the sketches. **6**
- Q.4 i. Define the following terms with sketches **4**
 (a) Station points and vanishing point
 (b) Horizontal plane and picture plane
- ii. What is perspective view? Explain 1- point perspective and 2- point perspective with brief sketches. **6**

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- OR iii. Draw the line plan of a residential building to be built in a plot area of 15 x 15 m² with a street of 6m in front of the plot facing South direction. Justify your placement of rooms in a few lines. **6**
 Use minimum dimensions of rooms as per building byelaws. The plot should include the following -
 (a) One living room (b) One dining room + kitchen
 (c) One bedroom (d) One bathroom
 (e) One WC (f) Staircase
- Q.5 i. Define fit and types of fit. **4**
 ii. A 50 mm diameter shaft rotate in a bush bearing. The tolerance for both shaft and the bearing is 0.050 mm and allowance is 0.10 mm. Find the dimensions of the shaft and the bearing on the hole basis system. **6**
- OR iii. Define shaft, hole, shaft basis system, hole basis system, actual size and basic size. **6**
- Q.6 i. Draw any four-convention representation of pipe joint. **2**
 ii. Draw any four-convention representation of welding joints. **2**
 iii. Drawing of set screw with proper dimension any six. **6**
- OR vi. Drawing with proper dimension of ray bolt and Lewis foundation bolt. **6**

Marking Scheme

FT3CO09 Building Planning & Machine Drawing

Q.1	i.	The foundations are placed below ground level, to increase-	1
		(c) Stability of structure	
	ii.	The platform at the end of a series of steps, is known as-	1
		(d) Landing	
	iii.	While designing a stair, the product of rise and going is approximately kept equal to-	1
		(b) 420	
	iv.	Pick up the correct statement from the following:	1
		(c) Revolving door is generally provided in cinema halls	
	v.	For effective drainage, the finished surface of flat roof should have a minimum slope of-	1
		(a) 1 in 20	
Q.2	vi.	The ceiling height of a building is-	1
		(b) Between ceiling and floor level	
	vii.	_____ is equal to the differences of the two limits of size of the part.	1
		(a) Tolerance	
	viii.	A positive allowance will always result in a _____ fit.	1
		(a) Clearance	
	ix.	Leftmost element on a welding symbol is-	1
		(c) Weld size	
	x.	Length of bolt is specified as measured from-	1
		(b) Bottom of head to end of bolt	
Q.3	Attempt any two:		
	i.	Different types of foundations	3 marks
		Explanation of Any two in 30 words with diagram	2 marks
	ii.	Classification of buildings into groups according to NBC	5
		All 9 group names with examples	
	iii.	Types of stairs	2.5 marks
Q.4		Dog-legged staircase with diagram	2.5 marks
	i.	Four aims of building drainage in a residential building	4
		1 mark for each	(1 mark * 4)
	ii.	Classification of traps according to shape with diagram	6
			3 marks
		Use with diagram	3 marks

OR	iii.	Types of sanitary appliances (any 6)	6
		0.5 mark for each (0.5 mark * 6)	3 marks
		Diagram 0.5 mark for each (0.5 mark * 6)	3 marks
Q.4	i.	(a) Station points and vanishing point	2 marks
		(b) Horizontal plane and picture plane	2 marks
	ii.	Perspective view	2 marks
		1- point perspective and sketch	2 marks
		2- point perspective and sketch	2 marks
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OR	iii.	Drawing for depicting plot with sides, facing of plot and street area	6
		1 mark for each (1 mark * 3)	3 marks
		One living room, One dining room + kitchen, One bedroom, One bathroom, One WC, Staircase with dimensions on the plot carries	3 marks
Q.5	i.	Definition of fit	1 mark
		Types of fit 1 mark for each (1 mark * 3)	3 marks
	ii.	Find the dimensions of the shaft and the bearing on the hole basis system.	6
OR		As per the solution	
	iii.	Define shaft, hole, shaft basis system, hole basis system, actual size and basic size.	6
		1 mark for each	(1 mark * 6)
Q.6	i.	Draw any four-convention representation of pipe joint.	2
		0.5 mark for each	(0.5 mark * 4)
	ii.	Draw any four-convention representation of welding joints.	2
		0.5 mark for each	(0.5 mark * 4)
	iii.	Drawing of set screw with proper dimension any six.	6
		1 mark for each	(1 mark * 6)
OR	vi.	Drawing with proper dimension of ray bolt	3 marks
		Lewis foundation bolt	3 marks
