Q.1. What is the value of minimum reinforcement (in case of Fe 415) in a slab?

(a) 0.1%

(b) 0.12%

(c) 0.15%

(d) 0.2%

Q.2. Which one of the following statements is correct?
Minimum tension steel in RC beam needs to be provided to

(a) prevent sudden failure

(b) arrest crack width

(c) control excessive hair cracks

(d) prevent surface hair cracks

Q.3. Which one of the following statements is correct?
Doubly reinforced beams are recommended when

(a) the depth of the beam is restricted

(b) the breadth of the beam is restricted

(c) both depth and breadth are restricted

(d) the shear is high

Q.4. Which one of the following statements is correct?
In a cantilever beam carrying gravity load, main reinforcement is provided

(a) above the neutral axis

(b) as vertical stirrups

(c) as a helical reinforcement

(d) below the neutral axis

Q.5. Match List-I (Beam Variable) with List-II (Design Provision) and select the correct answer using the codes:

	List – I		List – II
A.	Flexure	1.	Minimum depth of section
B.	Shear	2.	Longitudinal steel reinforcement
C.	Bond	3.	Stirrups
D.	Deflection	4.	Anchorage in support

Codes
A. A – 3, B – 2, C – 1, D – 4
B. A – 2, B – 3, C – 1, D – 4
C. A – 3, B – 2, C – 4, D – 1
D. A – 2, B – 3, C – 4, D – 1

Q.6. Match List I (Codal Parameter) with List II (Structural Member) and select the correct answer using the code given below the lists:

	List – I		List – II
A.	0.04 bD	1.	Column
B.	250 b2/d	2.	Cantilever
C.	100 b2/d	3.	Continuous beam
D.	(kx /x) / D	4.	Beam

Codes
A. A – 4, B – 1, C – 2, D – 3
B. A – 2, B – 3, C – 4, D – 1
C. A – 4, B – 3, C – 2, D – 1
D. A – 2, B – 1, C – 4, D – 3

Q.7. Drop panel is a structural component in

(a) Grid floor

(b) Flat plate

(c) Flat slab

(d) Slab-beam system of floor

Q.8. A doubly reinforced concrete beam has effective cover d' to the centre of compression reinforcement Xu is the depth of neutral axis, and d is the effective depth to the centre of tension reinforcement. What is the maximum strain in concrete at the level of compression reinforcement?

(a) 0.0035 (1 - d'/d)

(b) 0.0035 (1 - d'/xu)

(c) 0.002 (1 - d'/xu)

(d) 0.002 (1 - d'/d)

Q.9. Consider the following statements:
In an under reinforced concrete beam,

1. Actual depth of neutral axis is less than the critical depth of neutral axis
2. Concrete reaches ultimate stress prior to steel reaching the ultimate stress
3. moment of resistance is less than that of balanced sections
4. lever arm of resisting couple is less than that of balanced sections

Which of the statements given above are correct?

(a) 1 and 2

(b) 1 and 3

(c) 2, 3 and 4

(d) 1 and 4

Q.10. A T-beam roof section has the following particulars:

Thickness of slab	100 mm
Width of rib	300 mm
Depth of beam	500 mm
Centre to centre distance	3.0 m
Effective span of beams	6.0 mm
Distance b/w points of contraflexure	3.6 m

What is the effective flange width of the T beam?

(a) 3000 mm

(b) 1900 mm

(c) 1600 mm

(d) 1500 mm