Q :) Select the determinate structure from the following. [DMRC 2020]

(a): Fixed beams

(b): Two-hinged arches

(c): Continuous beams

(d): Cantilever beams

Q :) Select the option that represents the correct matching of items from List A and B. [DMRC 2020]

List – A	List – B
1. Manometer	(a) Velocity of flow in a pipe
2. Pitot tube	(b) Discharge through small canal
3. Venturimetre	(c) Pressure at point in pipe
4. Notches	(d) Discharge through pipe

(a): 1-c;2-d;3-a;4-b

(b): 1-c;2-a;3-d;4-b

(c): 1-d;2-c;3-b;4-d

(d): 1-b;2-d;3-a;4-c

Q :) Bernoulli's equation is NOT applicable for: [LMRC JE 2020]
(a) Flow of ideal fluid with zero viscosity
(b) Incompressible flow
(c) One dimensional flow
(d) Rotational flow

Q :) The design strength of member under axial tension is given by
_____. [LMRC AE 2020]

(a) $T_{dg} = A_g \times f_y$

(b) $T_{dg} = A_g \times f_y \times \gamma_{mo}$

(c) $T_{dg} = A_g \times f_y / \gamma_{mo}$

(d) $T_{dg} = A_g / f_y \times \gamma_{mo}$

Q :) The velocity component of a two-dimensional fluid flow is given by v = Axy. The unknown velocity component such that continuity equation is satisfied is equal to: [LMRC AE 2020]

(a) $0.5\ Ax^2 + f(y)$

(b) $-Ay^2/x + f(y)$

(c) $-0.5\ Ay/x + f(y)$

(d) $Ay^2/x + f(y)$

Q :) If the pump head is 75 m, discharge is 0.464 m³/s and the motor speed is 1440 rpm at rated condition, the specific speed of the pump is about
[JPSE 2020]
(a) 4
(b) 26
(c) 38
(d) 1440

Q :) Water flows through a 100 mm diameter pipe with a velocity of 0.015 m/sec. If the kinematic viscosity of water is 1.13×10^{-6} m^2/sec, the friction factor of the pipe material is [JPSE 2020]
(a) 0.0015
(b) 0.032
(c) 0.037
(d) 0.048

Q :) The unit of inertia of an area is [ISRO 2020]

(a): Kg/m

(b): Kg/sq.m

(c): m^4

(d): m^3

Q :) A steel rod of 30 mm diameter and 3 m length is subjected to an axial pull of 50 kN. If $E = 200 \times 10^9$ pa, the elongation of the rod will be

[ISRO 2020]

(a): 2.225 mm

(b): 1.062 mm

(c): 0.525 mm

(d): 3.152 mm

Q :) I.S. Code of practice for design of raft foundation is: [UPPCL 2020]
(a): IS 456: 2000
(b): IS 2950: 1981
(c): IS 1904: 1986
(d): IS 1080: 1985

Q :) The shortest distance from the root of the fillet weld to the face of the weld is called as: [UPPCL 2020]
(a): Effective length
(b): Effective Throat thickness
(c): Effective area
(d): Effective depth

Q :) How much is the Carbon Content (%) in hard-steel?

[MPSC PAPER-I 2019]

(a) 0.5 − 0.8

(b) 0.8 − 1.5

(c) 0.3 − 0.5

(d) 0.15 − 0.3

Q :) The volume of groundwater extracted by gravity drainage from a saturated water bearing material is known as [MPSC PAPER- II 2019]
(a) Field capacity
(b) Specific retention
(c) Specific capacity
(d) Yield

Q :) The distance from the centre of a pumped well to the point, where the drawdown is zero or is inappreciable, is known as

[MPSC PAPER- II 2019]

(a) Drawdown

(b) Cone of pressure

(c) Radius of influence

(d) Piezometric surface

Q :) According to IS 800, in case of structural steel design, the span length of a flexural member in a continuous frame system shall be taken as the distance between: [CIL 2016-17]

(a): Diametrically opposite ends of the support
(b): Centre to centre of the support + twice the eccentricity
(c):   Centre to centre of the support
(d): Edge to edge of the support
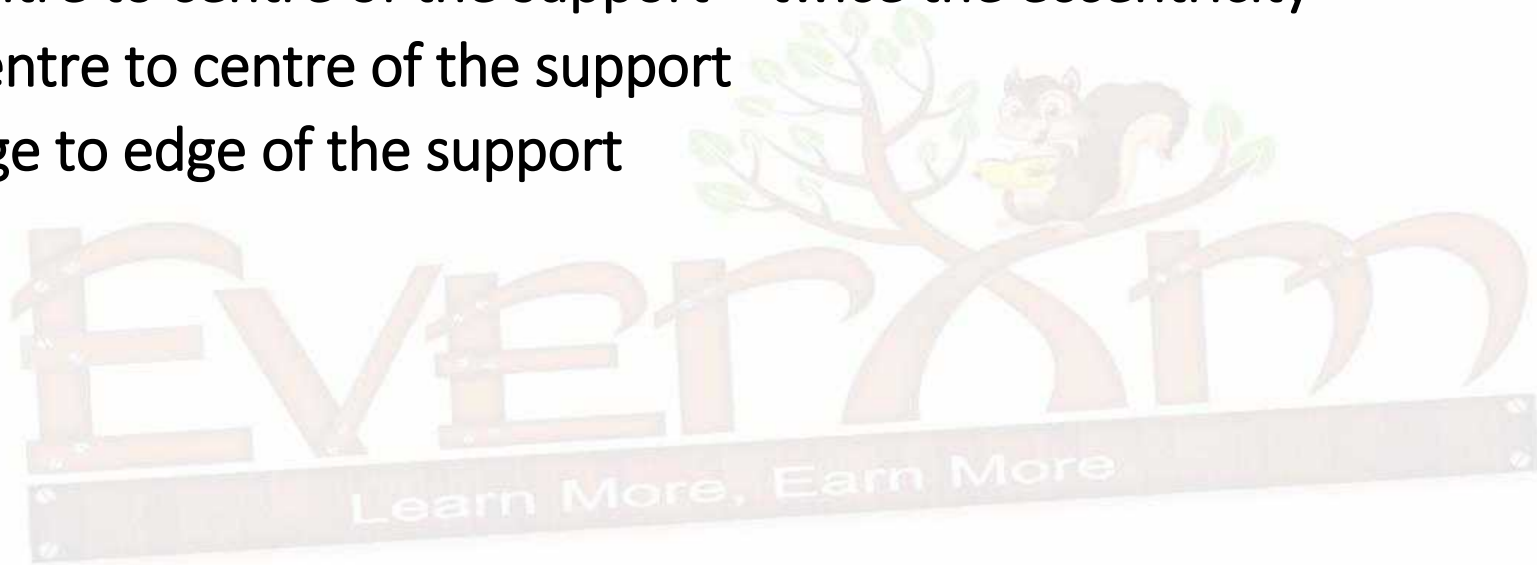
Q :) Which of the following equals the number of unknown to be determined, in stiffness method of structural analysis? [CIL 2016-17]

(a): Kinetic indeterminacy

(b): Static indeterminacy

(c): Kinematic indeterminacy

(d): Sum of static and kinematic indeterminacy