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LMRC Assistant Engineer

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Lucknow Metro Rail Corporation Shift 1

Notations :

1. Options shown in green color and with ✓ icon are correct.
2. Options shown in red color and with ✗ icon are incorrect.

Question Paper Name: ASSISTANT ENGINEER Civil Actual Final Shift 1
Subject Name: ASSISTANT ENGINEER CIVIL
Duration: 90

Group 1

Group Maximum Duration : 0
Group Minimum Duration : 90
Revisit allowed for view? : No
Revisit allowed for edit? : No

Mandatory or Optional:

Technical
Mandatory

Question Number : 1 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following oxide is in the highest percentage in ordinary portland cement?

Options :

1. ✗ Iron oxide
2. ✗ Magnesium oxide
3. ✓ Calcium oxide
4. ✗ Aluminium oxide

Question Number : 2 Question Type : MCQ

Correct : 1 Wrong : 0.33

According to IS 456, the estimated flexural strength of concrete of grade M25 ($f_{ck} = 25 \text{ MPa}$) would be:

Options :

1. ✓ 35 kg/sq cm
2. ✗ 50 kg/sq cm
3. ✗ 75 kg/sq cm

4. ✖ 25 kg/sq cm

Question Number : 3 Question Type : MCQ

Correct : 1 Wrong : 0.33

A concrete mix of grade M40 is to be used for pavements using paver machine. The recommended slump range as per IS:456 - 2000 is:

Options :

- 1. ✔ 25-75 mm
- 2. ✖ 50-100 mm
- 3. ✖ 75-100 mm
- 4. ✖ 100-150 mm

Question Number : 4 Question Type : MCQ

Correct : 1 Wrong : 0.33

Tetrapods are to be designed to be kept on the shores of Arabian sea. It is expected that these structures would face high tides for 70% of the time and low tides for the remaining 30% of the time. The exposure class to be considered for these structures as per IS 456 would be:

Options :

- 1. ✖ Severe
- 2. ✖ Very Severe
- 3. ✔ Extreme
- 4. ✖ Moderate

Question Number : 5 Question Type : MCQ

Correct : 1 Wrong : 0.33

A flat slab of span length 6.45 m was cast today afternoon. As per the recommendations of IS 456, the minimum time after which the props should be removed is:

Options :

- 1. ✖ 7 days
- 2. ✖ 10 days
- 3. ✔ 14 days
- 4. ✖ 21 days

Question Number : 6 Question Type : MCQ

Correct : 1 Wrong : 0.33

According to IS 456, simply supported beam of effective depth, d and breadth, b shall be so proportioned that the clear distance between the lateral restraints does not exceed

Options :

- 1. ✔ $60b$ or $\frac{250b^2}{d}$, whichever is less

2. ✖ $25b$ or $\frac{100b^2}{d}$, whichever is less

3. ✖ $60b$ or $\frac{100b^2}{d}$, whichever is less

4. ✖ $25b$ or $\frac{250b^2}{d}$, whichever is less

Question Number : 7 Question Type : MCQ

Correct : 1 Wrong : 0.33

Column or strut is a compression member, the effective length of which exceeds X times the least lateral dimension; where X is

Options :

1. ✖ 12

2. ✔ 3

3. ✖ 6

4. ✖ 9

Question Number : 8 Question Type : MCQ

Correct : 1 Wrong : 0.33

Lap splices are not recommended to be used for rebar diameter above

Options :

1. ✖ 32 mm

2. ✔ 36 mm

3. ✖ 25 mm

4. ✖ 28 mm

Question Number : 9 Question Type : MCQ

Correct : 1 Wrong : 0.33

As per IS 456, the minimum nominal cover specified for footings is:

Options :

1. ✖ 25 mm

2. ✖ 40 mm

3. ✔ 50 mm

4. ✖ 75 mm

Question Number : 10 Question Type : MCQ

Correct : 1 Wrong : 0.33

The maximum possible voids ratio for a uniformly graded sand of perfectly spherical grains is:

Options :

1. ✖ 33.33

- 2. ✖ 66.66
- 3. ✖ 50.5
- 4. ✔ 47.63

Question Number : 11 Question Type : MCQ

Correct : 1 Wrong : 0.33

A clay has unconfined compressive strength of 200 kN/sq m in undisturbed state. The clay was then remolded and the unconfined compressive strength was found to be 60 kN/sq m. The sensitivity of this clay is:

Options :

- 1. ✖ 0.30
- 2. ✔ 3.33
- 3. ✖ 2.33
- 4. ✖ 1.68

Question Number : 12 Question Type : MCQ

Correct : 1 Wrong : 0.33

A soil was tested for classification purpose and it was observed that the liquid limit is 20%, while the plastic limit is 14%. The group symbol for this soil would be:

Options :

- 1. ✖ MI & OI
- 2. ✖ CI
- 3. ✖ CL
- 4. ✔ CL-ML

Question Number : 13 Question Type : MCQ

Correct : 1 Wrong : 0.33

In which soil structure are the particles arranged more or less parallel to each other?

Options :

- 1. ✖ Single grained
- 2. ✖ Honeycomb
- 3. ✖ Flocculent
- 4. ✔ Dispersed

Question Number : 14 Question Type : MCQ

Correct : 1 Wrong : 0.33

A 10 m deep sandy stratum of bulk density 20 kN/cu m is having the water table at 2 m below the ground level. Assuming the density of water as 10 kN/cu m, the effective stress (in kN/sq m) at 10 m below the ground will be:

Options :

- 1. ✖ 80
- 2. ✔ 120

3. ✖ 200

4. ✖ 60

Question Number : 15 Question Type : MCQ

Correct : 1 Wrong : 0.33

The volume of water released from a storage per unit decline in hydraulic head in the aquifer, per unit area of the aquifer is called as:

Options :

1. ✖ Transmissibility

2. ✔ Storativity

3. ✖ Specific yield

4. ✖ Specific retention

Question Number : 16 Question Type : MCQ

Correct : 1 Wrong : 0.33

The quantity of seepage in a 25 m high dam laid on an impermeable foundation is storing water upto 20 m height. If the construction soil is assumed to behave in a homogeneous and isotropic manner and if the coefficient of permeability is 3.00×10^{-8} m/s and if a square flow-net diagram has 4 flow channels and 20 equipotential drops, then the estimated seepage (m^3/s) per unit length through the dam is:

Options :

1. ✔ 12×10^{-8}

2. ✖ 3×10^{-6}

3. ✖ 10×10^{-8}

4. ✖ 20×10^{-8}

Question Number : 17 Question Type : MCQ

Correct : 1 Wrong : 0.33

The intensity of passive earth pressure ($\text{N}/\text{sq m}$) at a depth of 10 m in a dry cohesionless sand with an angle of internal friction of 30 degree and submerged unit weight of $21.81 \text{ kN}/\text{m}^3$, if the water table is at ground level, will be (assume the unit weight of water as $10 \text{ kN}/\text{m}^3$):

Options :

1. ✖ 39.6

2. ✖ 654.3

3. ✔ 460.0

4. ✖ 153.3

Question Number : 18 Question Type : MCQ

Correct : 1 Wrong : 0.33

According to IS 2720 (V), for clayey soils to ensure uniform distribution of moisture throughout the soil mass, after mixing water, the soil-water mixture shall be left to stand for X hours, where X is:

Options :

1. ✖ 16
2. ✖ 12
3. ✖ 18
4. ✔ 24

Question Number : 19 Question Type : MCQ

Correct : 1 Wrong : 0.33

The voids ratio of a cohesionless soil sample in its loosest state is 1, while in its densest state it is 0.5. If the natural voids ratio of the deposit is 0.6, then the degree of density of the soil is:

Options :

1. ✖ 0.5
2. ✖ 0.6
3. ✖ 1
4. ✔ 0.8

Question Number : 20 Question Type : MCQ

Correct : 1 Wrong : 0.33

The liquid limit of remolded clay is found to be 30%. What will be the estimated value of compression index of this soil?

Options :

1. ✔ 0.14
2. ✖ 0.18
3. ✖ 0.15
4. ✖ 0.12

Question Number : 21 Question Type : MCQ

Correct : 1 Wrong : 0.33

A 5 m thick compressible soil undergoes 90% consolidation four times faster under two way drainage when compared to one-way drainage. In an identical soil layer of 10 m thickness, two way drainage will be faster as compared to one-way drainage by

Options :

1. ✖ 800%
2. ✔ 400%
3. ✖ 250%
4. ✖ 200%

Question Number : 22 Question Type : MCQ

Correct : 1 Wrong : 0.33

Plate load test is useful in estimating:

Options :

1. ✗ Vertical settlement
2. ✗ Bearing capacity of a stratum
3. ✗ Lateral movement in the stratum
4. ✓ Bearing capacity & vertical settlement of a stratum

Question Number : 23 Question Type : MCQ

Correct : 1 Wrong : 0.33

The load carrying capacity of a friction pile in a clayey strata is 180 kN. If a group of 7 piles are designed with an efficiency factor of 0.75, then the total load carrying capacity (kN) of the group will be:

Options :

1. ✗ 1260
2. ✓ 945
3. ✗ 1680
4. ✗ 1200

Question Number : 24 Question Type : MCQ

Correct : 1 Wrong : 0.33

For clays of moderate to high plasticity, which of the following agent is the best for improving soil properties?

Options :

1. ✗ Cement
2. ✗ Fly ash
3. ✓ Lime
4. ✗ Slag

Question Number : 25 Question Type : MCQ

Correct : 1 Wrong : 0.33

The width of carriageway for multi-lane pavements as recommended by the Indian Roads Congress is:

Options :

1. ✓ 3.5 m per lane
2. ✗ 3.75 m per lane
3. ✗ 2.5 m per lane
4. ✗ 3.65 m per lane

Question Number : 26 Question Type : MCQ

Correct : 1 Wrong : 0.33

A road stretch is designed for a limiting speed of 72 kmph and is build with a material offering a coefficient of friction of 0.40. If the reaction time of the driver is 2.5 s, and if there is two-way traffic on a single lane road, then what is the stopping sight distance?

Options :

1. ✗ 100 m
2. ✓ 200 m
3. ✗ 300 m
4. ✗ 150 m

Question Number : 27 Question Type : MCQ

Correct : 1 Wrong : 0.33

A street lighting is to be designed. The street width is 15 m, mounting height is 7.5 m and lamp size is 6000 lumen. The coefficient of utilization is 0.36 and the maintenance factor is 0.75. The spacing (m) between light poles will be:

Options :

1. ✗ 19.2
2. ✗ 24
3. ✓ 18
4. ✗ 16

Question Number : 28 Question Type : MCQ

Correct : 1 Wrong : 0.33

For designing plain cement concrete pavement, the critical loading combination is:

Options :

1. ✓ Load stress + frictional stress + warping stress
2. ✗ load stress + warping stress
3. ✗ Load stress + frictional stress - warping stress
4. ✗ Load stress - frictional stress + warping stress

Question Number : 29 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following is not a component of an expansion joint used in jointed plain cement concrete?

Options :

1. ✗ Dowel bars
2. ✗ Joint filler
3. ✗ Joint sealer
4. ✓ Tie bar

Question Number : 30 Question Type : MCQ

Correct : 1 Wrong : 0.33

The aggregate impact value (%) for aggregates to be used for base course of a pavement is:

Options :

1. ✓ 30
2. ✗ 40
3. ✗ 15
4. ✗ 25

Question Number : 31 Question Type : MCQ

Correct : 1 Wrong : 0.33

Benkelman beam deflection method is used for design of:

Options :

1. ✓ Flexible overlay over flexible pavement
2. ✗ Flexible overlay over rigid pavement
3. ✗ Rigid overlay over flexible pavement
4. ✗ Rigid overlay over rigid pavement

Question Number : 32 Question Type : MCQ

Correct : 1 Wrong : 0.33

According to IS 73, the minimum penetration of VG30 grade bitumen tested at 25 degree C is:

Options :

1. ✗ 80
2. ✗ 60
3. ✓ 45
4. ✗ 35

Question Number : 33 Question Type : MCQ

Correct : 1 Wrong : 0.33

A contour map indicates that there are closed contours with higher values inside. What does this feature represent?

Options :

1. ✗ depression
2. ✗ lake
3. ✓ hill or mountain
4. ✗ plateau

Question Number : 34 Question Type : MCQ

Correct : 1 Wrong : 0.33

Cubic parabola is a type of:

Options :

1. ✖ Simple curve
2. ✖ Compound curve
3. ✖ Reverse curve
4. ✔ Transition curve

Question Number : 35 Question Type : MCQ

Correct : 1 Wrong : 0.33

While operating a theodolite, the operation of bringing the vertical circle to the right of the observer, if originally it is to the left, and vice – versa is called as:

Options :

1. ✖ Swinging
2. ✖ Transiting
3. ✔ Changing face
4. ✖ Centering

Question Number : 36 Question Type : MCQ

Correct : 1 Wrong : 0.33

A poor fix of the table is when:

Options :

1. ✖ Angle subtended is large
2. ✖ the station is within the great triangle
3. ✔ the station is near the great circle
4. ✖ Angle subtended is small

Question Number : 37 Question Type : MCQ

Correct : 1 Wrong : 0.33

The following offsets were taken from a chain line to an irregular boundary line at an interval of 10 m.

0, 2.50, 3.50, 5.00, 4.60, 3.20, 0 m

The area (in m²) between the chain line, the irregular boundary line and the end offsets by trapezoidal formula is:

Options :

1. ✖ 196.67
2. ✔ 188
3. ✖ 164
4. ✖ 152

Question Number : 38 Question Type : MCQ

Correct : 1 Wrong : 0.33

If the duty of a crop is 864 hectare/cumec and the base period is 120 days, then what is the delta of the crop?

Options :

1. ✗ 60 cm
2. ✓ 120 cm
3. ✗ 100 cm
4. ✗ 90 cm

Question Number : 39 Question Type : MCQ

Correct : 1 Wrong : 0.33

If d represents the grain size, then the critical shear stress, at which the incipient motion of sediment takes place is proportional to:

Options :

1. ✗ $d^{2/3}$
2. ✓ d
3. ✗ $d^{1/2}$
4. ✗ $d^{1/3}$

Question Number : 40 Question Type : MCQ

Correct : 1 Wrong : 0.33

For the most economical trapezoidal channel section,

Options :

1. ✗ bottom width is thrice the depth of the flow
2. ✗ bottom width is half the depth of the flow
3. ✓ hydraulic mean radius is half the depth of the flow
4. ✗ hydraulic mean radius is equal to the depth of the flow

Question Number : 41 Question Type : MCQ

Correct : 1 Wrong : 0.33

The best method of reclaiming alkaline soils is by

Options :

1. ✗ Leaching
2. ✓ Addition of gypsum to the soil and leaching
3. ✗ Addition of gypsum to the soil
4. ✗ Providing additional drainage

Question Number : 42 Question Type : MCQ

Correct : 1 Wrong : 0.33

Aggrading rivers are the rivers that are

Options :

1. ✗ scouring
2. ✓ silting
3. ✗ meandering
4. ✗ depleting in flow

Question Number : 43 Question Type : MCQ

Correct : 1 Wrong : 0.33

For a flood control reservoir, the effective storage is equal to

Options :

1. ✗ useful storage + valley storage
2. ✗ useful storage – valley storage
3. ✗ useful storage + surcharge storage + valley storage
4. ✓ useful storage + surcharge storage – valley storage

Question Number : 44 Question Type : MCQ

Correct : 1 Wrong : 0.33

The safety valve of a dam is its

Options :

1. ✓ spillway
2. ✗ inspection gallery
3. ✗ outlet sluices
4. ✗ drainage gallery

Question Number : 45 Question Type : MCQ

Correct : 1 Wrong : 0.33

In a Francis turbine, the water:

Options :

1. ✓ flows out through a closed draft tube
2. ✗ flows out openly
3. ✗ either flows out through a draft tube or openly depending on the type of design
4. ✗ neither flows out openly nor through a closed draft tube

Question Number : 46 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following forces is of least importance in the designing of an arch dam?

Options :

1. ✗ temperature stresses
2. ✗ yield stress of the concrete

- 3. ☒ Uplift pressure
- 4. ☐ reservoir water force

Question Number : 47 Question Type : MCQ

Correct : 1 Wrong : 0.33

A streamline is a line which:

Options :

- 1. ☐ is normal to the velocity vector at every point
- 2. ☒ is tangential to the velocity vector everywhere at a given instant
- 3. ☐ represents lines of constant velocity potential
- 4. ☐ represents lines of constant stream function

Question Number : 48 Question Type : MCQ

Correct : 1 Wrong : 0.33

A fire hose has a nozzle attached to it and the nozzle discharges a jet of water into the atmosphere at 20 m/s. This will put the nozzle in

Options :

- 1. ☒ tension
- 2. ☐ compression
- 3. ☐ bending
- 4. ☐ state of zero stress

Question Number : 49 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following is a dimensionless number?

Options :

- 1. ☐ Manning's coefficient
- 2. ☒ Pipe friction factor
- 3. ☐ Chezy's coefficient
- 4. ☐ Hazen-William coefficient

Question Number : 50 Question Type : MCQ

Correct : 1 Wrong : 0.33

In a pipe network,

Options :

- 1. ☐ the algebraic sum of discharges around each elementary circuit must be zero
- 2. ☐ the head at each node must be the same
- 3. ☐ the piezometric head loss in each line of the circuit is the same
- 4. ☒ the algebraic sum of the piezometric head drops around each elementary circuit is zero

Question Number : 51 Question Type : MCQ

Correct : 1 Wrong : 0.33

A laser-doppler anemometer is a device to measure

Options :

1. ✖ shear stress at a boundary
2. ✖ surface tension of a fluid
3. ✔ the turbulent velocity fluctuations in a flow
4. ✖ dragforce on an aerofoil

Question Number : 52 Question Type : MCQ

Correct : 1 Wrong : 0.33

The rates of rainfall for successive 20 min period of 140 minutes are 2.5, 2.5, 10, 7.6, 1.25, 1.25 and 5 cm/h. Taking the value of phi-index as 3.2 cm/h, the total runoff (in cm) is:

Options :

1. ✖ 6
2. ✔ 4.33
3. ✖ 10
4. ✖ 5

Question Number : 53 Question Type : MCQ

Correct : 1 Wrong : 0.33

A hydraulic jump ensures:

Options :

1. ✖ change of subcritical flow to super-critical flow
2. ✔ change of supercritical flow to sub-critical flow
3. ✖ change of subcritical flow to critical flow
4. ✖ change of supercritical flow to critical flow

Question Number : 54 Question Type : MCQ

Correct : 1 Wrong : 0.33

A river carries a minimum flow of 26 cumecs and the plant receives a daily assured supply with a load factor of 75%. If the net head available to the plant is 20 m and if the plant efficiency is 60%, then what is the peak load generated? Assume unit weight of water as 10 kN/m³.

Options :

1. ✖ 3432 kW
2. ✔ 4576 kW
3. ✖ 4655 kW
4. ✖ 3544 kW

Question Number : 55 Question Type : MCQ

Correct : 1 Wrong : 0.33

Census records indicate the current population of a city as 60000, population 10 years ago as 55000, population 20 years ago as 50000, population 30 years ago as 45000. What would be the probable population after two decades (20 years), when calculated using arithmetical increase method?

Options :

1. ✖ 65000
2. ✖ 62500
3. ✔ 70000
4. ✖ 75000

Question Number : 56 Question Type : MCQ

Correct : 1 Wrong : 0.33

A rectangular tank of length 15 m, width 6 m and depth 3 m is used for treating 3.6×10^6 ml/d. What would be the detention period of the tank?

Options :

1. ✖ 1 hr 32 min
2. ✖ 2 hr
3. ✔ 1 hr 48 min
4. ✖ 2 hr 10 min

Question Number : 57 Question Type : MCQ

Correct : 1 Wrong : 0.33

What is the most common source of acidity in water?

Options :

1. ✖ Oxygen
2. ✖ Sulphuric acid
3. ✔ Carbon dioxide
4. ✖ Nitrogen

Question Number : 58 Question Type : MCQ

Correct : 1 Wrong : 0.33

The purpose of providing a balancing reservoir in a water supply distribution system is to:

Options :

1. ✔ address the frequent fluctuations in the rate of consumption
2. ✖ equalize the pressure heads in the distribution system
3. ✖ store additional water for contingency
4. ✖ store water for mitigating drought

Question Number : 59 Question Type : MCQ

Correct : 1 Wrong : 0.33

A town disposes off its sewage by land treatment in a farm of 150 hectares with a designated area of 50% for rest and rotation. If the rate of water supply is 150 l/d/head, 75% of water is converted into sewerage and if the population is 50000, the consuming capacity of the soil (l/hectare/day) will be:

Options :

1. ✖ 45000
2. ✖ 56000
3. ✖ 50000
4. ✔ 56250

Question Number : 60 Question Type : MCQ

Correct : 1 Wrong : 0.33

The biochemical treatment of sewage effluents is a process of

Options :

1. ✖ Dehydration
2. ✖ Carbonation
3. ✔ Oxidation
4. ✖ Reduction

Question Number : 61 Question Type : MCQ

Correct : 1 Wrong : 0.33

One of the main effects of greenhouse is:

Options :

1. ✖ Reduced vegetation
2. ✔ Increased vegetation
3. ✖ No effect on vegetation
4. ✖ Depletion of vegetation

Question Number : 62 Question Type : MCQ

Correct : 1 Wrong : 0.33

Acid rains result out of excessive

Options :

1. ✔ SO₂ and NO
2. ✖ NO and O₃
3. ✖ CO₂ and O₃
4. ✖ CO and CO₂

Question Number : 63 Question Type : MCQ

Correct : 1 Wrong : 0.33

What is the threshold of audibility in decibel?

Options :

1. ☒ 0
2. ☐ 40
3. ☐ 66
4. ☐ 92

Question Number : 64 Question Type : MCQ
Correct : 1 Wrong : 0.33

Reverberation time is typically defined as the time required for the sound level to decrease by:

Options :

1. ☐ 25 dB
2. ☐ 36 dB
3. ☒ 60 dB
4. ☐ 72 dB

Question Number : 65 Question Type : MCQ
Correct : 1 Wrong : 0.33

If a cantilever beam (elastic modulus E and moment of inertia I) of effective length carries a load P at the free end; then the maximum deflection will be

Options :

1. ☐ $\frac{3PI^3}{8EI}$
2. ☐ $\frac{PI^3}{48EI}$
3. ☒ $\frac{PI^3}{3EI}$
4. ☐ $\frac{5PI^3}{384EI}$

Question Number : 66 Question Type : MCQ
Correct : 1 Wrong : 0.33

A simply supported beam of length '3a' supports three loads separated by distance 'a'. The middle load is 2P, while the loads at distance 'a' from each support are P each. What will be the maximum shear force in the beam?

Options :

1. ☒ 2P
2. ☐ 4P
3. ☐ 6P
4. ☐ Zero

Question Number : 67 Question Type : MCQ

Correct : 1 Wrong : 0.33

If k is the bulk modulus and n is the Poisson's ratio, then which of the following gives the elastic modulus of the material?

Options :

1. ✓ $3k(1 - 2n)$

2. ✗ $\frac{3kn}{1 + n}$

3. ✗ $\frac{3k(1 - 2n)}{2(1 + n)}$

4. ✗ $\frac{3k(1 - n)}{(1 + n)}$

Question Number : 68 Question Type : MCQ

Correct : 1 Wrong : 0.33

The first theorem of Castigliano states that in a beam or truss subjected to any load system, the deflection at any point y is given by the partial differential coefficient of X w.r.t. a force P , acting at the point y in the direction in which the deflection is desired, where X is:

Options :

1. ✗ angular deflection

2. ✗ moment of inertia

3. ✗ load with respect to position

4. ✓ total strain energy

Question Number : 69 Question Type : MCQ

Correct : 1 Wrong : 0.33

For a 6 m long fixed beam carrying two loads of 300 kN, each at 2 m from each support, the point of contraflexure will be situated from distance 'a' from left support, where 'a' is

Options :

1. ✓ 1.33 m

2. ✗ 3 m

3. ✗ 2 m

4. ✗ 1.5 m

Question Number : 70 Question Type : MCQ

Correct : 1 Wrong : 0.33

The area of influence line diagram for fixed end moment of fixed beam of span L is:

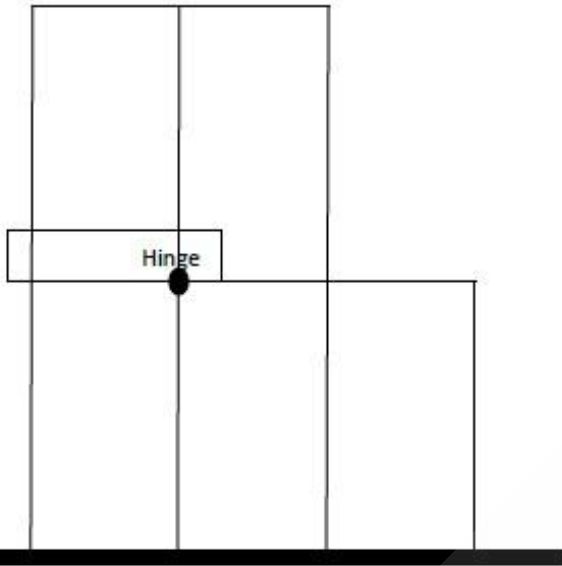
Options :

1. ✗ $0.125L^2$

2. ✓ $0.0833L^2$
3. ✗ $0.0625L^2$
4. ✗ $0.0416L^2$

Question Number : 71 Question Type : MCQ
 Correct : 1 Wrong : 0.33

What is the static indeterminacy of the 2D frame given below?



Options :

1. ✗ 10
2. ✓ 12
3. ✗ 14
4. ✗ 16

Question Number : 72 Question Type : MCQ
 Correct : 1 Wrong : 0.33

The term 'characteristic load' means that value of load which has a X percent probability of not being exceeded during the life of the structure, where X is:

Options :

1. ✗ 85
2. ✗ 97
3. ✗ 92.5
4. ✓ 95

Question Number : 73 Question Type : MCQ
 Correct : 1 Wrong : 0.33

According to IS 800, the slenderness ratio of the bracing member shall be limited to:

Options :

1. ✗ 100

2. ✖ 60
3. ✔ 120
4. ✖ 150

Question Number : 74 Question Type : MCQ

Correct : 1 Wrong : 0.33

According to IS 800, the maximum deflection in a steel beam of length L is limited to:

Options :

1. ✖ $\frac{L}{350}$
2. ✖ $\frac{L}{250}$
3. ✖ $\frac{L}{225}$
4. ✔ $\frac{L}{325}$

Question Number : 75 Question Type : MCQ

Correct : 1 Wrong : 0.33

The load at which an element, a member or a structure as a whole, either collapses in service or buckles in a load test and develops excessive lateral (out of plane) deformation or instability is called as:

Options :

1. ✖ Yield load
2. ✖ Maximum load
3. ✔ Buckling load
4. ✖ Plastic load

Numerical and logical Reasoning questions

Mandatory or Optional:

Mandatory

Question Number : 76 Question Type : MCQ

Correct : 1 Wrong : 0.33

Find out the word-pair in which the two words hold the same relationship as the two words in the word-pair given below.

Flower : Jasmine

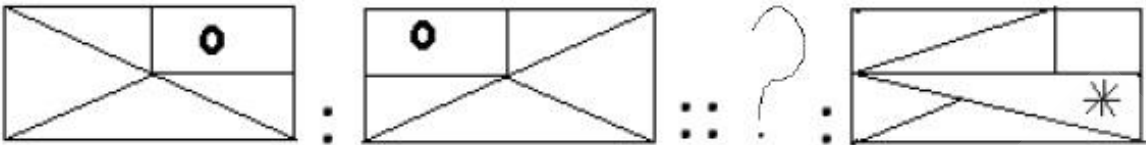
Options :

1. ✖ River : Water
2. ✔ Religion : Christianity

- 3. ✖ Temple : Deity
- 4. ✖ School : Teaching

Question Number : 77 Question Type : MCQ
 Correct : 1 Wrong : 0.33

The first two figures on the left side of the sign ‘::’ are related in a certain way. The same relationship holds for the second pair of figures on the right side of the sign ‘::’, of which one is missing. Which of the following is the missing one?



Options :

- 1. ✖
- 2. ✖
- 3. ✔
- 4. ✖

Question Number : 78 Question Type : MCQ
 Correct : 1 Wrong : 0.33

Which number will replace the question mark in the number series below?
 3648, 3684, 3468, 3486, ? , 3846

Options :

- 1. ✖ 3684
- 2. ✖ 8364
- 3. ✖ 3468
- 4. ✔ 3864

Question Number : 79 Question Type : MCQ
 Correct : 1 Wrong : 0.33

A car covers the distance from A to B in 13 hours and 30 minutes. If the car covers the first half of the distance at the rate of 20 km/hr and the second half at the rate of 25 km/hr, what is the distance from A to B?

Options :

- 1. ✖ 240 km
- 2. ✖ 260 km
- 3. ✔ 300 km

4. ✖ 330 km

Question Number : 80 Question Type : MCQ
Correct : 1 Wrong : 0.33

A's mother is the sister of B and the daughter of C. D is the daughter of B. If E is the wife of C, then which of the following is true?

- Options :
- 1. ✔ E is the grandmother of D
 - 2. ✖ D is the brother of A
 - 3. ✖ C is the uncle of D
 - 4. ✖ E is the aunt of B

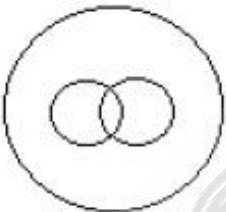
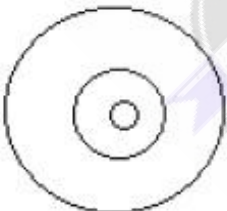
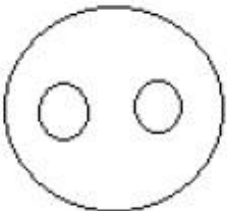
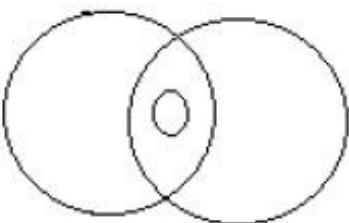
Question Number : 81 Question Type : MCQ
Correct : 1 Wrong : 0.33

Four words are given below out of which three are alike in some manner and one is different. Which of the given words is different from the other three?

- Options :
- 1. ✔ Triangle
 - 2. ✖ Square
 - 3. ✖ Rectangle
 - 4. ✖ Rhombus

Question Number : 82 Question Type : MCQ
Correct : 1 Wrong : 0.33

Four figures are given below out of which three are similar in a certain way and one is different. Which of the given figures is different from the other three?

- Options :
- 1. ✖ 
 - 2. ✖ 
 - 3. ✖ 
 - 4. ✔ 

Question Number : 83 Question Type : MCQ

Correct : 1 Wrong : 0.33

In a class of 35 students, 2 speak English and Hindi, 3 speak English and Telugu, and 5 speak Hindi and Telugu. If 4 students speak all three languages, how many students speak only one language?

Options :

- 1. ✖ 11
- 2. ✖ 20
- 3. ✔ 21
- 4. ✖ 25

Question Number : 84 Question Type : MCQ

Correct : 1 Wrong : 0.33

If 'INSTRUMENT' is written as 'HOTSQTNFOU' in a certain language, then how would 'MULTIPLIER' be written in the language?

Options :

- 1. ✖ LVMSHOMHCQ
- 2. ✔ LVMSHOMJFS
- 3. ✖ NTKUJQKHDS
- 4. ✖ LVMSHOMJFQ

Question Number : 85 Question Type : MCQ

Correct : 1 Wrong : 0.33

Each of the following two rows contains 3 numbers. Some rules are given below to be used for getting the resultant for each row separately. Apply the rules for each row from left to right and answer the question.

Rules:

- (i) If an even number is followed by an odd but not prime number, both are to be multiplied.
- (ii) If an even number is followed by a prime number, both are to be added.
- (iii) If an odd number is followed by a composite odd number, the first number is to be subtracted from the square of the second number.
- (iv) If an odd number is followed by an even number, the odd one is to be subtracted from the even number.

Row I : 19, 54, 15

Row II: 12, 21, 31

What is the difference between the resultants of the first row and the second row?

Options :

- 1. ✖ 190
- 2. ✖ 259
- 3. ✖ 103
- 4. ✔ 93

Mandatory or Optional:

Mandatory

Question Number : 86 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following simplifies the use of system software?

Options :

1. ✖ Spreadsheet
2. ✖ Operating System
3. ✖ Multitasking
4. ✔ Timesharing

Question Number : 87 Question Type : MCQ

Correct : 1 Wrong : 0.33

The output quality of a printer is measured by:

Options :

1. ✖ Dots per inch
2. ✔ Dots per square inch
3. ✖ Dots printed in record time
4. ✖ Pixels printed per record time

Question Number : 88 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following is not an input device?

Options :

1. ✔ Wi Fi
2. ✖ Game pad
3. ✖ Trackball
4. ✖ MIDI keyboard

Question Number : 89 Question Type : MCQ

Correct : 1 Wrong : 0.33

Translator for low level programming language is called:

Options :

1. ✔ Assembler
2. ✖ Compiler
3. ✖ Linker
4. ✖ Loader

Question Number : 90 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which type of software supports communication, collaboration and coordination at the same time?

Options :

1. ✖ SCM software
2. ✖ E-business software
3. ✖ CRM software

4. ✓ Groupware

Question Number : 91 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following decimal numbers is equivalent to the binary number $(1011112)_2$?

Options :

1. ✗ 27_{10}

2. ✗ 33_{10}

3. ✗ 54_{10}

4. ✓ 47_{10}

Question Number : 92 Question Type : MCQ

Correct : 1 Wrong : 0.33

Bookmarks are used to:

Options :

1. ✗ add anchors to web pages

2. ✗ mark the end of a paragraph or a document

3. ✓ jump to specific location in a document

4. ✗ add hyperlinks to web pages

Question Number : 93 Question Type : MCQ

Correct : 1 Wrong : 0.33

If an Excel file is inserted into a Word document, the data is:

Options :

1. ✗ hyperlinked

2. ✓ placed in Word table

3. ✗ linked

4. ✗ embedded

Question Number : 94 Question Type : MCQ

Correct : 1 Wrong : 0.33

OSI stands for:

Options :

1. ✗ Open System Interface

2. ✗ Out System Interface

3. ✓ Open System Interconnection

4. ✗ Out System Interconnection

Question Number : 95 Question Type : MCQ

Correct : 1 Wrong : 0.33

The web site of a company is hosted on a:

Options :

1. ✗ Web infrastructure

2. ✓ Web server

3. ✗ Web page

4. ✖ Web client

GK / Awareness

Mandatory or Optional:

Mandatory

Question Number : 96 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following Indian rulers fought with Alexander?

Options :

- 1. ✖ Ambhi
- 2. ✖ Skand Gupta
- 3. ✖ Samudragupta
- 4. ✔ Porus

Question Number : 97 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which Article under Constitution of India is dealing with recruitment, conditions of service of person serving the Union or State?

Options :

- 1. ✖ Article 302
- 2. ✔ Article 309
- 3. ✖ Article 315
- 4. ✖ Article 321

Question Number : 98 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which of the following rates, is not decided by the Reserve Bank of India?

Options :

- 1. ✖ Bank Rate
- 2. ✔ Income Tax Rate
- 3. ✖ Repo Rate
- 4. ✖ Reverse Repo Rate

Question Number : 99 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which is the first National Park established in India?

Options :

- 1. ✖ Kanha National Park
- 2. ✖ Bandipur National Park
- 3. ✔ Corbett National Park
- 4. ✖ Periyar National Park

Question Number : 100 Question Type : MCQ

Correct : 1 Wrong : 0.33

Which instrument is used to record earthquake?

Options :

1. ✖ Magnetic Compass
2. ✔ Seismograph
3. ✖ Sonometer
4. ✖ Spectograph

