# DSSSB
# JE (Civil)

## Previous Year Paper

### Tire-II

### 27 Sept, 2023 Shift 1

GOVT. OF NCT OF DELHI
Delhi Subordinate Services Selection Board
FC-18, Institutional Area, Karkardooma, Delhi – 110092.
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| | |
|---|---|
| Participant ID | |
| Participant Name | |
| Test Center Name | |
| Test Date | 27/09/2023 |
| Test Time | 9:00 AM - 11:30 AM |
| Subject | Tire II Junior Engineer (Civil) or Section Officer (Civil) |

Section : **Section A1**

**Q.1** The commonly used regenerator in Zeolite process is:

**Ans**
✗ 1. Dil. HCl
✗ 2. Dil. NAOH
✗ 3. Dil. $H_2SO_4$
✓ 4. NaCl

Question ID : **630680389760**
Option 1 ID : **6306801519500**
Option 2 ID : **6306801519501**
Option 3 ID : **6306801519499**
Option 4 ID : **6306801519498**

**Q.2** Consider a flywheel of mass 10 kg, uniform thickness 15 mm, and radius 100 mm. If it rotates at 300 RPM, then the KE of the flywheel (in Joules) is:

**Ans**
✗ 1. 30.46
✓ 2. 24.65
✗ 3. 35.06
✗ 4. 32.54

Question ID : **630680389769**
Option 1 ID : **6306801519535**
Option 2 ID : **6306801519534**
Option 3 ID : **6306801519537**
Option 4 ID : **6306801519536**

Q.3 A long straight conductor carries a current of 5 A. The magnitude of the magnetic field at a point 20 cm from the conductor is:

Ans
1. $50\ \mu T$
2. $500\ \mu T$
3. $5\mu T$
4. $0.5\ \mu T$

Question ID : **630680389754**
Option 1 ID : **6306801519476**
Option 2 ID : **6306801519477**
Option 3 ID : **6306801519475**
Option 4 ID : **6306801519474**

Q.4 Which of the following is NOT a type of wet corrosion?

Ans
1. Pitting corrosion
2. Soil corrosion
3. Liquid metal corrosion
4. Galvanic corrosion

Question ID : **630680389761**
Option 1 ID : **6306801519503**
Option 2 ID : **6306801519502**
Option 3 ID : **6306801519505**
Option 4 ID : **6306801519504**

Q.5 The equation of a straight line that passes through the point $(2, -5)$ and perpendicular to the line $4x - y = 1$ is:

Ans
1. $\mathbf{x - 4y - 18 = 0}$
2. $\mathbf{4x + 3y - 9 = 0}$
3. $\mathbf{x + 4y + 18 = 0}$
4. $\mathbf{4x - y + 18 = 0}$

Question ID : **630680389764**
Option 1 ID : **6306801519517**
Option 2 ID : **6306801519514**
Option 3 ID : **6306801519515**
Option 4 ID : **6306801519516**

**Q.6** A convex lens has a 30 cm focal length in air. The focal length of the same convex lens in medium A is (given that the refractive index of air-medium A = 1.4, the refractive index for air-glass = 1.5):

**Ans**

1. ✗ 0.11 m
2. ✗ 0.21 m
3. ✗ 1.1m
4. ✓ 2.1 m

Question ID : **630680389757**
Option 1 ID : **6306801519488**
Option 2 ID : **6306801519486**
Option 3 ID : **6306801519489**
Option 4 ID : **6306801519487**

**Q.7** Capacitors connected in series behave like:

**Ans**

1. ✗ Galvanometer
2. ✗ Resistors connected in series
3. ✓ Resistors connected in parallel
4. ✗ N identical resistors connected in series

Question ID : **630680389753**
Option 1 ID : **6306801519473**
Option 2 ID : **6306801519470**
Option 3 ID : **6306801519471**
Option 4 ID : **6306801519472**

**Q.8** Consider a material A has volume expansion coefficient $\alpha_v = 3.9 \times 10^{-4}/°C$. The linear expansion coefficient $\alpha_l$ of the material A is:

**Ans**

1. ✗ $10^{-4}/°C$.
2. ✗ $3.9 \times 10^{-4}/°C$.
3. ✗ $2.6 \times 10^{-4}/°C$.
4. ✓ $1.3 \times 10^{-4}/°C$.

Question ID : **630680389755**
Option 1 ID : **6306801519481**
Option 2 ID : **6306801519478**
Option 3 ID : **6306801519479**
Option 4 ID : **6306801519480**

Q.9 If the system of linear equations $x + 2y - z = 0, 3x + (k+7)y - 3z = 0, 2x + 4y + (k-3)z = 0$ has a non-trivial solution, then the value of $k$ is:

Ans
1. $1$ ✗
2. $\pm 1$ ✓
3. $0$ ✗
4. $-1$ ✗

Question ID : **630680389763**
Option 1 ID : **6306801519512**
Option 2 ID : **6306801519511**
Option 3 ID : **6306801519513**
Option 4 ID : **6306801519510**

Q.10 Consider two forces $\vec{A}$ and $\vec{B}$ of magnitudes A and B and their resultant force $\vec{R}$ has magnitude R. If the B is doubled, then R is also doubled. Similarly, if B is reversed, then also R is doubled. Then the ratio A : B : R is:

Ans
1. $\sqrt{2} : 1 : \sqrt{3}$ ✗
2. $2 : 3 : 2$ ✗
3. $2 : 1 : 3$ ✗
4. $\sqrt{2} : \sqrt{3} : \sqrt{2}$ ✓

Question ID : **630680389772**
Option 1 ID : **6306801519549**
Option 2 ID : **6306801519546**
Option 3 ID : **6306801519548**
Option 4 ID : **6306801519547**

Q.11 The molarity of 0.75 mol of calcium hydroxide in 500 ml of solution is:

Ans
1. 1.5 M ✓
2. 0.002 M ✗
3. 2 M ✗
4. 0.15 M ✗

Question ID : **630680389758**
Option 1 ID : **6306801519490**
Option 2 ID : **6306801519491**
Option 3 ID : **6306801519493**
Option 4 ID : **6306801519492**

Q.12 The chemical composition of cartridge brass is:

Ans
1. $Cu = 60\ \% + Zn = 30\ \% + Sn = 10\ \%$
2. $Cu = 70\ \% + Zn = 30\ \%$
3. $Cu = 50\ \% + Zn = 50\ \%$
4. $Cu = 60\ \% + Zn = 30\ \% + Al = 10\ \%$

Question ID : **630680389762**
Option 1 ID : **6306801519506**
Option 2 ID : **6306801519509**
Option 3 ID : **6306801519507**
Option 4 ID : **6306801519508**

Q.13 Ranjan is moving with his race car on a circular racetrack of radius 200 m and it is banked at an angle of 10°. If the coefficient of friction between the wheels of the race car and the road is 0.2, then find the optimum speed of the race car to avoid wear and tear on its tyres.

Ans
1. 16.72 m/s
2. 14.53 m/s
3. 18.78 m/s
4. 20.79 m/s

Question ID : **630680389771**
Option 1 ID : **6306801519544**
Option 2 ID : **6306801519545**
Option 3 ID : **6306801519543**
Option 4 ID : **6306801519542**

Q.14 Ram has a mass of 60 kg and he runs up from the ground floor to the first floor of his college through stairs of 40 steps with each step of 40 cm height in 20.0 s. The power supplied by him is _____ (take g = 10 $m/s^2$).

Ans
1. 480 W
2. 960 W
3. 720 W
4. 240 W

Question ID : **630680389770**
Option 1 ID : **6306801519539**
Option 2 ID : **6306801519541**
Option 3 ID : **6306801519540**
Option 4 ID : **6306801519538**

**Q.15** The primary heat transfer mode which is responsible for the transfer of heat energy from the Sun to the Earth is:

**Ans**

✗ 1. conduction

✗ 2. convection

✗ 3. convection and conduction

✓ 4. radiation

Question ID : **630680389756**
Option 1 ID : **6306801519483**
Option 2 ID : **6306801519482**
Option 3 ID : **6306801519485**
Option 4 ID : **6306801519484**

**Q.16** If ω is an imaginary cube root of unity, $(1 - \omega + \omega^2)^3$ equals to:

**Ans**

✗ 1. $8\omega$

✓ 2. $-8$

✗ 3. $8\omega^2$

✗ 4. $8$

Question ID : **630680389767**
Option 1 ID : **6306801519526**
Option 2 ID : **6306801519529**
Option 3 ID : **6306801519527**
Option 4 ID : **6306801519528**

**Q.17** If $x^y y^x = C$, then $\frac{dy}{dx} = ?$

**Ans**

✗ 1. $\frac{x(y + x\,ln\,y)}{y(x + y\,ln\,x)}$

✓ 2. $-\frac{y(y + x\,ln\,y)}{x(x + y\,ln\,x)}$

✗ 3. $\frac{y(y + x\,ln\,y)}{x(x + y\,ln\,x)}$

✗ 4. $-\frac{x(y + x\,ln\,y)}{y(x + y\,ln\,x)}$

Question ID : **630680389765**
Option 1 ID : **6306801519521**
Option 2 ID : **6306801519518**
Option 3 ID : **6306801519519**
Option 4 ID : **6306801519520**

Q.18 The value of the integral $\int_{-1/3}^{1/3} \sec(x) ln\left|\frac{1+x}{1-x}\right| dx$ is:

Ans
1. 0 ✔
2. 1/3 ✘
3. $-1/3$ ✘
4. 1 ✘

Question ID : **630680389766**
Option 1 ID : **6306801519525**
Option 2 ID : **6306801519523**
Option 3 ID : **6306801519522**
Option 4 ID : **6306801519524**

Q.19 When 50 ml of water sample was treated with 10 ml of 10% KI solution and then titrated with $\frac{N}{50}$ Hypo solution using starch as indicator, 2.5 ml of Hypo was used for starch end point. Calculate the strength of free chlorine (in ppm) in the given water sample.

Ans
1. 0.001 ✘
2. 0.0355 ✘
3. 1 ✘
4. 35.5 ✔

Question ID : **630680389759**
Option 1 ID : **6306801519496**
Option 2 ID : **6306801519494**
Option 3 ID : **6306801519497**
Option 4 ID : **6306801519495**

Q.20 Suppose a person fires a bullet of mass 100.0 g with a speed of 100 m/s on a target of plywood of thickness 20 cm. The bullet emerges from the target with only 20% of its initial kinetic energy. Then the emergent speed of the bullet is:

Ans
1. 40.74 m/s ✘
2. 44.72 m/s ✔
3. 34.70 m/s ✘
4. 38.78 m/s ✘

Question ID : **630680389768**
Option 1 ID : **6306801519533**
Option 2 ID : **6306801519531**
Option 3 ID : **6306801519530**
Option 4 ID : **6306801519532**

Section : **Section A2**

Q.1 Which of the following is true?

Ans ✔ 1. Specific speed of Francis turbine < Specific speed of Kaplan turbine

✘ 2. Specific speed of Francis turbine < Specific speed of Pelton wheel

✘ 3. Specific speed of Kaplan turbine < Specific speed of Pelton wheel

✘ 4. Specific speed of Kaplan turbine < Specific speed of Francis turbine

Question ID : **630680389781**
Option 1 ID : **6306801519582**
Option 2 ID : **6306801519585**
Option 3 ID : **6306801519584**
Option 4 ID : **6306801519583**

Q.2 The output voltage of the transformer for primary distribution is:

Ans ✘ 1. 66 kV

✘ 2. 33 kV

✘ 3. 132 kV

✔ 4. 11 kV

Question ID : **630680389776**
Option 1 ID : **6306801519564**
Option 2 ID : **6306801519563**
Option 3 ID : **6306801519565**
Option 4 ID : **6306801519562**

Q.3 A set of finite rules to be followed in calculations or other problem-solving operations is known as _____

Ans ✘ 1. flow-chart

✔ 2. Algorithm

✘ 3. Function

✘ 4. Procedure

Question ID : **630680389786**
Option 1 ID : **6306801519603**
Option 2 ID : **6306801519602**
Option 3 ID : **6306801519604**
Option 4 ID : **6306801519605**

Q.4 Identify the gear system shown in the figure below.

Ans
✗ 1. Helical gears
✗ 2. Spur gears
✓ 3. Worm gears
✗ 4. Herringbone gears

Question ID : **630680389779**
Option 1 ID : **6306801519576**
Option 2 ID : **6306801519577**
Option 3 ID : **6306801519574**
Option 4 ID : **6306801519575**

Q.5 Which of the following is NOT a type of lubrication system?

Ans
✓ 1. Sprinkler feed system
✗ 2. Gravity feed system
✗ 3. Force feed system
✗ 4. Splash feed system

Question ID : **630680389778**
Option 1 ID : **6306801519573**
Option 2 ID : **6306801519570**
Option 3 ID : **6306801519572**
Option 4 ID : **6306801519571**

Q.6 State the true/false of the following statements as applicable for domestic electrical wiring.

A. The height of the energy meter should be higher than that of switchboard and 1.75 m above the floor.

B. Each sub circuit, consisting of 800 watts load is to be protected by its individual fuse or MCB installed in the distribution switchboard.

Ans
✓ 1. Both A and B are true
✗ 2. Only B is true
✗ 3. Only A is true
✗ 4. Both A and B are false

Question ID : **630680389777**
Option 1 ID : **6306801519566**
Option 2 ID : **6306801519569**
Option 3 ID : **6306801519568**
Option 4 ID : **6306801519567**

Q.7 What is the output of the following C code snippet?

```
int i=0;

for(i=1; i<10; i++);

printf("%d", i);
```

Ans
1. 0
2. Syntax Error
3. 9
4. 10

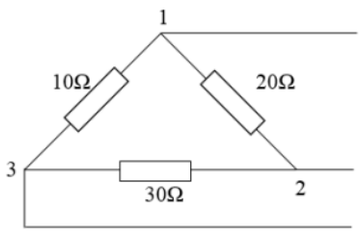
Question ID : **630680389787**
Option 1 ID : **6306801519606**
Option 2 ID : **6306801519609**
Option 3 ID : **6306801519607**
Option 4 ID : **6306801519608**

Q.8 Which of the following is NOT true in the case of High voltage transmission?

Ans
1. The size of the conductors will increase
2. Voltage regulation will be improved
3. Losses will be reduced
4. Efficiency will be better

Question ID : **630680389775**
Option 1 ID : **6306801519558**
Option 2 ID : **6306801519561**
Option 3 ID : **6306801519559**
Option 4 ID : **6306801519560**

Q.9




What will be the value of $R_2$ if the delta connection is converted into equivalent star connection?

Ans
1. 5 Ω
2. 7.33 Ω
3. 3.33 Ω
4. 10 Ω

Question ID : **630680389774**
Option 1 ID : **6306801519555**
Option 2 ID : **6306801519556**
Option 3 ID : **6306801519554**
Option 4 ID : **6306801519557**

Q.10 Identify the power transmission device from the figure below.

Ans
1. Universal coupling
2. Socket coupling
3. Oldham coupling
4. Sprocket coupling

Question ID : **630680389782**
Option 1 ID : **6306801519589**
Option 2 ID : **6306801519586**
Option 3 ID : **6306801519588**
Option 4 ID : **6306801519587**

Q.11 Which of the following is NOT a synthetic refrigerant in the refrigeration cycle?

Ans
1. Perfluorocarbon
2. chlorofluorocarbon
3. Propane
4. Hydrofluorocarbon

Question ID : **630680389780**
Option 1 ID : **6306801519579**
Option 2 ID : **6306801519581**
Option 3 ID : **6306801519580**
Option 4 ID : **6306801519578**

Q.12 Which of the following statements regarding collapsible doors is INCORRECT?

Ans
✔ 1. These doors revolve about a pivoted point.

✘ 2. These doors are not suitable for air-conditioned halls.

✘ 3. These doors provide both exit and entry spaces for users.

✘ 4. If fitted in a room, these doors do not provide privacy inside.

Question ID : **630680389790**
Option 1 ID : **6306801519619**
Option 2 ID : **6306801519620**
Option 3 ID : **6306801519621**
Option 4 ID : **6306801519618**

Q.13 Which of the following is NOT an internal hardware component of a desktop computer?

Ans
✘ 1. CPU

✘ 2. Network interface card

✔ 3. Operating system

✘ 4. Heat sink

Question ID : **630680389783**
Option 1 ID : **6306801519590**
Option 2 ID : **6306801519593**
Option 3 ID : **6306801519592**
Option 4 ID : **6306801519591**

Q.14 Which of the following statements is FALSE regarding the conditions in which a pile foundation is preferred?

Ans
✘ 1. When the load from the superstructure is heavy and it is to be distributed to a wider area

✘ 2. When the top soil has poor bearing capacity and it cannot support the load of the structure

✔ 3. When there are small fluctuations in the sub-soil water level

✘ 4. When the top soil is of expansive nature

Question ID : **630680389789**
Option 1 ID : **6306801519616**
Option 2 ID : **6306801519617**
Option 3 ID : **6306801519614**
Option 4 ID : **6306801519615**

**Q.15** A 100-Watt, 200 Volts lamp is connected in series with a second lamp of 100 Watt, 150 Volts across a 250 Volts supply. Find the voltage across the second lamp.

**Ans**

✗ 1. 100 V
✗ 2. 125 V
✗ 3. 160 V
✓ 4. 90 V

Question ID : **630680389773**
Option 1 ID : **6306801519551**
Option 2 ID : **6306801519552**
Option 3 ID : **6306801519553**
Option 4 ID : **6306801519550**

**Q.16** Part 5 of the National Building Code of India (2016) is about _____.

**Ans**

✗ 1. fire and life safety
✗ 2. administration
✗ 3. landscaping
✓ 4. building materials

Question ID : **630680389792**
Option 1 ID : **6306801519626**
Option 2 ID : **6306801519629**
Option 3 ID : **6306801519628**
Option 4 ID : **6306801519627**

**Q.17** Which of the following is NOT a Linux-based operating system for the mobile phone?

**Ans**

✓ 1. iPhone OS
✗ 2. WebOS
✗ 3. Maemo
✗ 4. Android

Question ID : **630680389785**
Option 1 ID : **6306801519601**
Option 2 ID : **6306801519599**
Option 3 ID : **6306801519600**
Option 4 ID : **6306801519598**

**Q.18** Which of the following options best describes the truthfulness of the given statements with reference to hardware and software of a computer?

(i) The grid of circuits underneath the keys of a computer keyboard is called as Key matrix.

(ii) An example of software is Windows 11, Adobe Photoshop, and Google Chrome.

**Ans**

✔ 1. (i)-True, (ii)-True

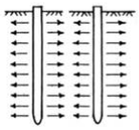
✘ 2. (i)-False, (ii)-True

✘ 3. (i)-False, (ii)-False

✘ 4. (i)-True, (ii)-False

Question ID : **630680389784**
Option 1 ID : **6306801519594**
Option 2 ID : **6306801519596**
Option 3 ID : **6306801519597**
Option 4 ID : **6306801519595**

**Q.19** Identify the type of pile shown in the figure below. (A pile is inserted into granular soil to increase the bearing capacity of the soil.)



**Ans**

✘ 1. Friction pile

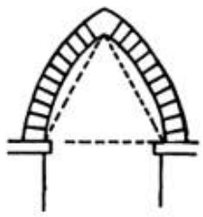
✘ 2. End-bearing pile

✘ 3. Tension pile

✔ 4. Compaction pile

Question ID : **630680389788**
Option 1 ID : **6306801519612**
Option 2 ID : **6306801519610**
Option 3 ID : **6306801519613**
Option 4 ID : **6306801519611**

Q.20 Identify the type of arch shown in the figure below.



Ans
1. Corbel arch
2. Flat arch
3. Gothic arch
4. Relieving arch

Question ID : **630680389791**
Option 1 ID : **6306801519625**
Option 2 ID : **6306801519622**
Option 3 ID : **6306801519624**
Option 4 ID : **6306801519623**

Section : **Section A3**

Q.1 Which of the following types of canal is classified based on the discharge and its relative importance in a given network of canals?

Ans
1. Power canal
2. Irrigation canal
3. Navigation canal
4. Main canal

Question ID : **630680389801**
Option 1 ID : **6306801519664**
Option 2 ID : **6306801519662**
Option 3 ID : **6306801519663**
Option 4 ID : **6306801519665**

Q.2 Which of the following options regarding the effects of water logging on agricultural land is INCORRECT?

Ans
1. Increase in capillary water available to plants
2. Fall in soil temperature
3. Decrease in crop yield due to growth of wild flora
4. Rise in amount of salt in surface soil

Question ID : **630680389797**
Option 1 ID : **6306801519648**
Option 2 ID : **6306801519646**
Option 3 ID : **6306801519649**
Option 4 ID : **6306801519647**

Q.3 Which of the following IS codes provides guidelines for estimation of deleterious materials and organic impurities present in the aggregates used for making concrete?

Ans
1. IS: 2386 (Part IV) - 1963
2. IS: 2386 (Part II) - 1963
3. IS: 2386 (Part I) - 1963
4. IS: 383 - 2016

Question ID : **630680389811**
Option 1 ID : **6306801519704**
Option 2 ID : **6306801519702**
Option 3 ID : **6306801519703**
Option 4 ID : **6306801519705**

Q.4 The wooden plank or slab of concrete or stone usually provided at the bottom of an entrance door is called:

Ans
1. door frame
2. shutter
3. threshold
4. reveal

Question ID : **630680389793**
Option 1 ID : **6306801519631**
Option 2 ID : **6306801519630**
Option 3 ID : **6306801519632**
Option 4 ID : **6306801519633**

Q.5 A water course commands an irrigated area of 6 $km^2$. Transplantation of rice crop takes 12 days and the total depth of water required by the crop is 40 cm on field during the transplantation period. Assuming loss of water to be 20% in the water course, estimate the duty of water at the head of the water course (in ha/cumec).

(Assume that there is no rainfall during the transplantation period.)

Ans
1. 324
2. 207.36
3. 259.2
4. 285.24

Question ID : **630680389800**
Option 1 ID : **6306801519660**
Option 2 ID : **6306801519658**
Option 3 ID : **6306801519659**
Option 4 ID : **6306801519661**

Q.6 What is the discharge capacity required at the outlet to irrigate 2200 hectares of sugarcane with the Kor depth of 14 cm and the Kor period of 20 days?

Ans
1. $1.56\ m^3/s$ ✗
2. $1.78\ m^3/s$ ✓
3. $1.63\ m^3/s$ ✗
4. $1.91\ m^3/s$ ✗

Question ID : **630680389796**
Option 1 ID : **6306801519642**
Option 2 ID : **6306801519644**
Option 3 ID : **6306801519643**
Option 4 ID : **6306801519645**

Q.7 Which of the following is a lightweight and manufactured aggregate, which is used to produce lightweight concrete?

Ans
1. Bloated clay ✓
2. Tuff ✗
3. Pumice ✗
4. Diatomite ✗

Question ID : **630680389810**
Option 1 ID : **6306801519700**
Option 2 ID : **6306801519699**
Option 3 ID : **6306801519701**
Option 4 ID : **6306801519698**

Q.8 In a rectangular channel of width 4 m and depth 2 m, water is running full. The bed slope is 1 in 3600. Find the velocity of the flow of water if Chezy's constant C = 60.

Ans
1. 4 m/s ✗
2. 3 m/s ✗
3. 2 m/s ✗
4. 1 m/s ✓

Question ID : **630680389803**
Option 1 ID : **6306801519673**
Option 2 ID : **6306801519672**
Option 3 ID : **6306801519671**
Option 4 ID : **6306801519670**

Q.9 Consider a liquid jet of diameter 'd'. Let 'p' be the pressure intensity inside the liquid jet above the outside pressure and '$\sigma$' be the surface tension of the liquid. What will be the correct mathematical expression to determine the surface tension on the liquid jet ( $\sigma$ )?

Ans

1. $\frac{pd}{4}$
2. $\frac{pd}{8}$
3. $\frac{pd}{2}$
4. $\frac{pd}{6}$

Question ID : **630680389802**
Option 1 ID : **6306801519667**
Option 2 ID : **6306801519669**
Option 3 ID : **6306801519666**
Option 4 ID : **6306801519668**

Q.10 As per Part 4 of the National Building Code of India (2016), which of the following types of buildings are classified as Group-B buildings?

Ans

1. Assembly buildings
2. Educational buildings
3. Business buildings
4. Storage buildings

Question ID : **630680389794**
Option 1 ID : **6306801519634**
Option 2 ID : **6306801519637**
Option 3 ID : **6306801519636**
Option 4 ID : **6306801519635**

Q.11 The classification of hydraulic turbines according to the type of energy at the inlet of the turbine includes _____.

Ans

1. mixed-flow turbines
2. medium-head turbines
3. reaction turbines
4. tangential-flow turbines

Question ID : **630680389805**
Option 1 ID : **6306801519681**
Option 2 ID : **6306801519679**
Option 3 ID : **6306801519678**
Option 4 ID : **6306801519680**

Q.12 The formula for the maximum efficiency ($\eta_{max}$) of a Pelton wheel turbine is _____, where Ø is vane angle at the outlet.

Ans

✗ 1. $\eta_{max} = \frac{\sin\emptyset}{2}$

✗ 2. $\eta_{max} = \frac{1 + \sin\emptyset}{2}$

✓ 3. $\eta_{max} = \frac{1 + \cos\emptyset}{2}$

✗ 4. $\eta_{max} = \frac{\cos\emptyset}{2}$

Question ID : **630680389806**
Option 1 ID : **6306801519685**
Option 2 ID : **6306801519683**
Option 3 ID : **6306801519682**
Option 4 ID : **6306801519684**

Q.13 Which of the following factors influence the magnitude of hydrostatic pressure on the unit length of a dam?

Ans

✗ 1. Shape of the dam face towards the downstream side

✗ 2. Overall length of the dam

✓ 3. Shape of the dam face towards the upstream side

✗ 4. Density of the material used in the dam

Question ID : **630680389804**
Option 1 ID : **6306801519676**
Option 2 ID : **6306801519677**
Option 3 ID : **6306801519675**
Option 4 ID : **6306801519674**

Q.14 Which of the following compositions of compounds bears the maximum portion of Bogue's compounds present in ordinary Portland cement?

Ans

✗ 1. $C_3S$ (Tricalcium silicate) and $C_3A$ (Tricalcium aluminate)

✗ 2. $C_3A$ (Tricalcium aluminate) and $C_4AF$ (Tetracalcium aluminoferrite)

✗ 3. $C_3A$ (Tricalcium aluminate) and $C_2S$ (Dicalcium silicate)

✓ 4. $C_3S$ (Tricalcium silicate) and $C_2S$ (Dicalcium silicate)

Question ID : **630680389808**
Option 1 ID : **6306801519690**
Option 2 ID : **6306801519693**
Option 3 ID : **6306801519692**
Option 4 ID : **6306801519691**

**Q.15** The duty of water is 1420 ha/cumec for a crop whose base period is 60 days. Calculate the delta for the given details.

**Ans**

✗ 1. 0.611 m
✗ 2. 0.542 m
✗ 3. 0.423 m
✓ 4. 0.365 m

Question ID : **630680389795**
Option 1 ID : **6306801519641**
Option 2 ID : **6306801519640**
Option 3 ID : **6306801519639**
Option 4 ID : **6306801519638**

**Q.16** _____ are the devices which are used for measuring the pressure by balancing the fluid column by a spring or dead weight.

**Ans**

✗ 1. Differential manometers
✗ 2. Piezometers
✓ 3. Mechanical gauges
✗ 4. Simple manometers

Question ID : **630680389807**
Option 1 ID : **6306801519687**
Option 2 ID : **6306801519689**
Option 3 ID : **6306801519688**
Option 4 ID : **6306801519686**

**Q.17** To avoid the segregation in concrete, it should not be dropped from a height of more than _____ while placing.

**Ans**

✓ 1. 1.5 m
✗ 2. 1 m
✗ 3. 2.5 m
✗ 4. 2 m

Question ID : **630680389812**
Option 1 ID : **6306801519707**
Option 2 ID : **6306801519706**
Option 3 ID : **6306801519709**
Option 4 ID : **6306801519708**

Q.18 Identify the INCORRECT statement about shotcrete.

Ans ✔ 1.
Shotcrete is the name given to mortar or concrete conveyed through a hose and pneumatically projected at a low velocity onto a backup surface.

✘ 2. Shotcrete is used in stabilising rock slopes.

✘ 3. Shotcrete is used for thin, lightly reinforced sections.

✘ 4.
Shotcrete is more formally called pneumatically applied mortar or concrete.

Question ID : **630680389809**
Option 1 ID : **6306801519694**
Option 2 ID : **6306801519697**
Option 3 ID : **6306801519696**
Option 4 ID : **6306801519695**

Q.19 Lining of an irrigation canal is required to _____.

Ans ✘ 1. retard the growth of weeds

✘ 2. minimise the seepage losses in the canal

✘ 3. reduce maintenance of the canal

✔ 4.
decrease the discharge in the canal section by decreasing the velocity of flow

Question ID : **630680389798**
Option 1 ID : **6306801519652**
Option 2 ID : **6306801519650**
Option 3 ID : **6306801519653**
Option 4 ID : **6306801519651**

Q.20 The specific yield value of an aquifer is always _____, as some water is retained in the aquifer by molecular and surface tension forces.

Ans ✘ 1. greater than its porosity

✔ 2. less than its porosity

✘ 3. the inverse of its porosity

✘ 4. equal to its porosity

Question ID : **630680389799**
Option 1 ID : **6306801519654**
Option 2 ID : **6306801519655**
Option 3 ID : **6306801519657**
Option 4 ID : **6306801519656**

Section : **Section A4**

**Q.1** On which of the following factors does the dosage of coagulants that should be added to the water NOT depend?

**Ans**

✗ 1. Temperature of water

✗ 2. Turbidity of water

✗ 3. Time of settlement

✓ 4. Viscosity of water

Question ID : **630680389826**
Option 1 ID : **6306801519763**
Option 2 ID : **6306801519762**
Option 3 ID : **6306801519764**
Option 4 ID : **6306801519765**

**Q.2** The principal source of water in which water can be obtained through direct intake from natural lakes is called _____.

**Ans**

✗ 1. rainwater

✓ 2. surface water source

✗ 3. groundwater source

✗ 4. desalinated water

Question ID : **630680389820**
Option 1 ID : **6306801519738**
Option 2 ID : **6306801519739**
Option 3 ID : **6306801519740**
Option 4 ID : **6306801519741**

**Q.3** Which of the following is a disadvantage of natural lime over modern cement?

**Ans**

✗ 1. Eco-friendliness

✓ 2. Lower compressive strength

✗ 3. Self-healing property

✗ 4. Cost-effectiveness

Question ID : **630680389828**
Option 1 ID : **6306801519770**
Option 2 ID : **6306801519771**
Option 3 ID : **6306801519773**
Option 4 ID : **6306801519772**

Q.4 A beam, of 5 m effective span, has its left end 'P' as a free end; whereas its right end 'Q' is a fixed supported end. The beam is subjected to a uniformly distributed load of 3 kN/m on the entire span. Find the point with the maximum shear force.

Ans
✔ 1. Point 'Q'
✘ 2. Point 'P'
✘ 3. Midpoint of the beam span
✘ 4. 1 m from the fixed support

Question ID : **630680389815**
Option 1 ID : **6306801519718**
Option 2 ID : **6306801519721**
Option 3 ID : **6306801519719**
Option 4 ID : **6306801519720**

Q.5 Select the Indian standard code which provides guidelines for testing and determination of the compressive strength of natural building stones.

Ans
✘ 1. IS 1121 (Part 2): 2013
✔ 2. IS 1121 (Part 1): 2013
✘ 3. IS 1121 (Part 4): 2013
✘ 4. IS 1121 (Part 3): 2013

Question ID : **630680389827**
Option 1 ID : **6306801519769**
Option 2 ID : **6306801519766**
Option 3 ID : **6306801519767**
Option 4 ID : **6306801519768**

Q.6 The correct sequence of the manufacturing process of fire bricks is _____.

Ans
✘ 1.
Tempering -> Weathering -> Digging -> Unsoiling -> Blending
✔ 2.
Unsoiling -> Digging -> Weathering -> Blending -> Tempering
✘ 3.
Digging -> Tempering -> Weathering -> Unsoiling -> Blending
✘ 4.
Weathering -> Tempering -> Digging -> Blending -> Unsoiling

Question ID : **630680389830**
Option 1 ID : **6306801519781**
Option 2 ID : **6306801519779**
Option 3 ID : **6306801519778**
Option 4 ID : **6306801519780**

Q.7 _____ are granite pieces with their surfaces hardened by keeping immersed in soda silicate for about two months.

Ans
1. Imperial stone
2. Ransom stone
3. Victoria stone
4. Bituminous stone

Question ID : **630680389829**
Option 1 ID : **6306801519775**
Option 2 ID : **6306801519774**
Option 3 ID : **6306801519777**
Option 4 ID : **6306801519776**

Q.8 Identify whether the following statements regarding the sources of water for water supply to a village are true or false.

S1: Infiltration galleries are provided for extraction of groundwater from wells in confined aquifers.

S2: The groundwater extracted from tube wells requires less treatment compared to the surface water from rivers.

Ans
1. Both S1 and S2 are false.
2. S1 is false and S2 is true.
3. Both S1 and S2 are true.
4. S1 is true and S2 is false.

Question ID : **630680389823**
Option 1 ID : **6306801519753**
Option 2 ID : **6306801519751**
Option 3 ID : **6306801519752**
Option 4 ID : **6306801519750**

Q.9 Identify the INCORRECT statement about the conjugate beam theorem from the following.

Ans
1. It is derived from the moment area theorem.
2. It is derived from the unit load method.
3. It is applicable even if a beam does not have the point of zero slope.
4. It is useful in finding the deflection.

Question ID : **630680389832**
Option 1 ID : **6306801519786**
Option 2 ID : **6306801519789**
Option 3 ID : **6306801519788**
Option 4 ID : **6306801519787**

Q.10 Which of the following equations matches with the below-mentioned condition of truss?

**Condition:** The truss is internally stable and statically determinate space truss.

Ans
1. $j < 2m - 3$
2. $m = 3j - 6$
3. $m > 2j - 3$
4. $m = 2j - 1$

Question ID : **630680389819**
Option 1 ID : **6306801519734**
Option 2 ID : **6306801519735**
Option 3 ID : **6306801519736**
Option 4 ID : **6306801519737**

Q.11 Which of the following types of sewers uses pipes that are manufactured by the hot process using clays and shales of special qualities and grades?

Ans
1. Plastic sewer
2. Brick sewer
3. Asbestos cement sewer
4. Stoneware sewer

Question ID : **630680389822**
Option 1 ID : **6306801519748**
Option 2 ID : **6306801519747**
Option 3 ID : **6306801519749**
Option 4 ID : **6306801519746**

Q.12 Common methods used for the desalination of water are:

Ans
1. distillation, reverse osmosis and electrodialysis
2. reverse osmosis, electrodialysis and filtration
3. distillation, filtration and electrodialysis
4. reverse osmosis, distillation and filtration

Question ID : **630680389821**
Option 1 ID : **6306801519745**
Option 2 ID : **6306801519743**
Option 3 ID : **6306801519742**
Option 4 ID : **6306801519744**

**Q.13** Find the value of strain energy of a metallic bar with cross-sectional area of 2 $cm^2$ and gauge length of 10 cm if it stretches 0.002 cm under a load of 10 kN.

**Ans**

1. ✔ 10 N-cm
2. ✘ 12 N-cm
3. ✘ 16 N-cm
4. ✘ 14 N-cm

Question ID : **630680389818**
Option 1 ID : **6306801519730**
Option 2 ID : **6306801519731**
Option 3 ID : **6306801519733**
Option 4 ID : **6306801519732**

**Q.14** In a cantilever beam loaded with point load at the free end, the maximum deflection occurs at _____.

**Ans**

1. ✘ one-fourth span from the fixed end
2. ✘ the fixed end
3. ✘ half span
4. ✔ the free end

Question ID : **630680389831**
Option 1 ID : **6306801519785**
Option 2 ID : **6306801519782**
Option 3 ID : **6306801519784**
Option 4 ID : **6306801519783**

**Q.15** Identify whether the following statements regarding bending stress and strain in a beam are true or false.

S1: The neutral surface of the beam experiences zero bending strain.

S2: The value of bending stress is zero at the neutral surface of the beam.

**Ans**

1. ✔ Both S1 and S2 are true.
2. ✘ Both S1 and S2 are false.
3. ✘ S1 is true and S2 is false.
4. ✘ S2 is true and S1 is false.

Question ID : **630680389816**
Option 1 ID : **6306801519724**
Option 2 ID : **6306801519722**
Option 3 ID : **6306801519723**
Option 4 ID : **6306801519725**

**Q.16** As per IS 456: 2000, what is the maximum permissible limit for the suspended matter present in water to be used in making concrete?

**Ans**

✗ 1. 20 mg/l

✗ 2. 1000 mg/l

✓ 3. 2000 mg/l

✗ 4. 200 mg/l

Question ID : **630680389813**
Option 1 ID : **6306801519711**
Option 2 ID : **6306801519713**
Option 3 ID : **6306801519712**
Option 4 ID : **6306801519710**

**Q.17** A water treatment plant with the capacity of 1,00,000 $m^3$/day has filter boxes of size (area) 10 m × 10 m. If five filters are out for service, what should be the loading rate (in $m^3/day/m^2$) of the remaining filters to maintain the capacity of the plant?

**Ans**

✗ 1. 300

✗ 2. 150

✓ 3. 200

✗ 4. 100

Question ID : **630680389824**
Option 1 ID : **6306801519757**
Option 2 ID : **6306801519755**
Option 3 ID : **6306801519756**
Option 4 ID : **6306801519754**

**Q.18** Which of the following is NOT a secondary air pollutant?

**Ans**

✗ 1. Sulphuric acid

✗ 2. Formaldehyde

✗ 3. Ozone

✓ 4. Nitrogen oxide

Question ID : **630680389825**
Option 1 ID : **6306801519760**
Option 2 ID : **6306801519759**
Option 3 ID : **6306801519758**
Option 4 ID : **6306801519761**

**Q.19** The ratio of Young's modulus to the modulus of rigidity of a material with Poisson's ratio 0.2 will be _____.

**Ans**

✗ 1. 0.2

✓ 2. 2.4

✗ 3. 3.2

✗ 4. 2.8

Question ID : **630680389814**
Option 1 ID : **6306801519714**
Option 2 ID : **6306801519715**
Option 3 ID : **6306801519717**
Option 4 ID : **6306801519716**

**Q.20** What is the equivalent length of a column which has one of its ends fixed and the other end free, according to Euler's column theory? The actual length of the column is 10 m.

**Ans**

✓ 1. 20 m

✗ 2. 5 m

✗ 3. $\frac{10}{\sqrt{2}}$m

✗ 4. 10 m

Question ID : **630680389817**
Option 1 ID : **6306801519729**
Option 2 ID : **6306801519727**
Option 3 ID : **6306801519728**
Option 4 ID : **6306801519726**

Section : **Section A5**

**Q.1** Which of the following statements is FALSE about the moment distribution method?

**Ans**

✓ 1. The moment distribution method is not suited for plane rigid frames.

✗ 2. It is an approximate method.

✗ 3. The degree of accuracy of results depends on the number of successive approximations.

✗ 4. The moment distribution method of analysis is applicable to beams and frames.

Question ID : **630680389835**
Option 1 ID : **6306801519801**
Option 2 ID : **6306801519799**
Option 3 ID : **6306801519800**
Option 4 ID : **6306801519798**

**Q.2** Determine the theoretical maximum dry density for a soil sample with specific gravity of 2.65 and optimum moisture content of 18%. (Take w = 1 g/cm$^3$.)

**Ans**

✗ 1. 1.902 g/cm$^3$

✗ 2. 1.832 g/cm$^3$

✗ 3. 1.605 g/cm$^3$

✓ 4. 1.794 g/cm$^3$

Question ID : **630680389850**
Option 1 ID : **6306801519861**
Option 2 ID : **6306801519860**
Option 3 ID : **6306801519858**
Option 4 ID : **6306801519859**

**Q.3** What is the term used to describe the type of soils that are carried by running water and deposited from suspension?

**Ans**

✓ 1. Alluvial deposits

✗ 2. Lacustrine deposits

✗ 3. Marine deposits

✗ 4. Aeolian deposits

Question ID : **630680389848**
Option 1 ID : **6306801519850**
Option 2 ID : **6306801519852**
Option 3 ID : **6306801519851**
Option 4 ID : **6306801519853**

**Q.4** Find the dry volume of the concrete required for 200 m$^2$ of 20 cm thick concrete work with proportion of 1 : 2 : 4.

**Ans**

✓ 1. 61.6 m$^3$

✗ 2. 54.3 m$^3$

✗ 3. 76.4 m$^3$

✗ 4. 80 m$^3$

Question ID : **630680389845**
Option 1 ID : **6306801519839**
Option 2 ID : **6306801519838**
Option 3 ID : **6306801519840**
Option 4 ID : **6306801519841**

Q.5 As per IS: 1498-1970, if the value of $C_u > 6$ and $C_c$ is between 1 and 3 for clean sand, it is classified as _____.

Ans
1. silty sand
2. poorly graded sand
3. clayey sand
4. well-graded sand

Question ID : **630680389849**
Option 1 ID : **6306801519856**
Option 2 ID : **6306801519854**
Option 3 ID : **6306801519857**
Option 4 ID : **6306801519855**

Q.6 What is the recommended range of camber for cement concrete roads in areas with heavy rainfall?

Ans
1. 1 in 40
2. 1 in 50
3. 1 in 33
4. 1 in 25

Question ID : **630680389836**
Option 1 ID : **6306801519803**
Option 2 ID : **6306801519802**
Option 3 ID : **6306801519804**
Option 4 ID : **6306801519805**

Q.7 Which of the following tests is used to find the property of toughness of aggregates?

Ans
1. Aggregate crushing strength test
2. Angularity number test
3. Los Angeles abrasion test
4. Aggregate impact test

Question ID : **630680389837**
Option 1 ID : **6306801519808**
Option 2 ID : **6306801519806**
Option 3 ID : **6306801519807**
Option 4 ID : **6306801519809**

Q.8 Railway wheels are coned in a slope of _____.

Ans
1. 1 in 10
2. 1 in 40
3. 1 in 20
4. 1 in 30

Question ID : **630680389838**
Option 1 ID : **6306801519810**
Option 2 ID : **6306801519813**
Option 3 ID : **6306801519811**
Option 4 ID : **6306801519812**

Q.9 As per IS 800: 2007, the distance between the centres of any two consecutive fasteners in a line adjacent and parallel to an edge of an outside plate shall NOT exceed _____.

Ans
1. 500 mm plus 4t or 200 mm, whichever is less
2. 50 mm plus 2t or 100 mm, whichever is less
3. 100 mm plus 2t or 100 mm, whichever is less
4. 100 mm plus 4t or 200 mm, whichever is less

Question ID : **630680389833**
Option 1 ID : **6306801519793**
Option 2 ID : **6306801519792**
Option 3 ID : **6306801519791**
Option 4 ID : **6306801519790**

Q.10 An angle section (used as a tension member) is connected with the longer leg (Net sectional area = 200 $mm^2$) through rivets. The gross sectional area of the outstanding leg is 160 $mm^2$. Calculate the net effective sectional area of the angle, as per IS: 800-2007.

Ans
1. $[160 + (15 \times 200/19)]\ mm^2$
2. $[160 + (25 \times 200/29)]\ mm^2$
3. $[200 + (25 \times 160/29)]\ mm^2$
4. $[200 + (15 \times 160/19)]\ mm^2$

Question ID : **630680389840**
Option 1 ID : **6306801519818**
Option 2 ID : **6306801519820**
Option 3 ID : **6306801519819**
Option 4 ID : **6306801519821**

**Q.11** An asset draws ₹20,000 every year after all the deductions. What will be its capitalised value with a rate of interest of 10% per annum?

**Ans**

✗ 1. ₹2,00,100

✓ 2. ₹2,00,000

✗ 3. ₹2,10,000

✗ 4. ₹2,00,500

Question ID : **630680389846**
Option 1 ID : **6306801519845**
Option 2 ID : **6306801519844**
Option 3 ID : **6306801519842**
Option 4 ID : **6306801519843**

**Q.12** As per IS: 800-2007, which of the following is NOT a classified type of steel cross-sections based on their moment rotation behaviour?

**Ans**

✗ 1. Slender section

✗ 2. Compact section

✗ 3. Plastic section

✓ 4. Rigid section

Question ID : **630680389843**
Option 1 ID : **6306801519833**
Option 2 ID : **6306801519832**
Option 3 ID : **6306801519831**
Option 4 ID : **6306801519830**

**Q.13** Which of the following is NOT a compression member?

**Ans**

✗ 1. Strut

✓ 2. Tie

✗ 3. Boom

✗ 4. Rafter

Question ID : **630680389842**
Option 1 ID : **6306801519826**
Option 2 ID : **6306801519827**
Option 3 ID : **6306801519829**
Option 4 ID : **6306801519828**

Q.14 Which of the following statements is correct about financial management?

A. The objective of financial management is profit maximisation.

B. The objective of financial management is wealth maximisation.

Ans
1. Only A is correct
2. Both A and B are correct
3. Only B is correct
4. Both A and B are incorrect

Question ID : **630680389852**
Option 1 ID : **6306801519866**
Option 2 ID : **6306801519868**
Option 3 ID : **6306801519867**
Option 4 ID : **6306801519869**

Q.15 The critical path method is a/an _____ oriented technique, which is used in project management.

Ans
1. activity
2. time
3. event
4. resource

Question ID : **630680389851**
Option 1 ID : **6306801519862**
Option 2 ID : **6306801519864**
Option 3 ID : **6306801519863**
Option 4 ID : **6306801519865**

Q.16 The expression for effective length ($l_e$) of a compression member can be obtained as $l_e = kl$. Here, 'k' indicates _____, where '$l$' is the unsupported length of the compression member.

Ans
1. effective length ratio
2. clear distance
3. unsupported length
4. constant

Question ID : **630680389841**
Option 1 ID : **6306801519825**
Option 2 ID : **6306801519822**
Option 3 ID : **6306801519824**
Option 4 ID : **6306801519823**

**Q.17** A room with inner-to-inner dimensions 4.8 m × 4.8 m is built by 20 cm thick walls all around. Calculate the central line length of walls.

**Ans**

✔ 1. 20 m

✘ 2. 22.6 m

✘ 3. 14 m

✘ 4. 15.9 m

Question ID : **630680389844**
Option 1 ID : **6306801519835**
Option 2 ID : **6306801519834**
Option 3 ID : **6306801519837**
Option 4 ID : **6306801519836**

**Q.18** Estimate the total cost of brickwork and plastering required for a wall which is 4 m long, 3 m high and 30 cm thick if the rate of brickwork is ₹320 per $m^3$ and that of plastering is ₹8.50 per $m^2$.

[Note: Thickness faces are not plastered.]

**Ans**

✘ 1. ₹1,297

✘ 2. ₹1,422

✔ 3. ₹1,356

✘ 4. ₹1,498

Question ID : **630680389847**
Option 1 ID : **6306801519846**
Option 2 ID : **6306801519848**
Option 3 ID : **6306801519847**
Option 4 ID : **6306801519849**

**Q.19** Which of the following statements is/are correct about the analysis of three-hinged arches?

A. Horizontal thrust may be found by using Castigliano's first theorem.

B. A three-hinged arch may have circular or parabolic shape.

**Ans**

✘ 1. Only A is correct

✘ 2. Both A and B are correct

✔ 3. Only B is correct

✘ 4. Both A and B are incorrect

Question ID : **630680389834**
Option 1 ID : **6306801519794**
Option 2 ID : **6306801519796**
Option 3 ID : **6306801519795**
Option 4 ID : **6306801519797**

**Q.20** Which of the following is NOT an economic study conducted during planning surveys in highway planning?

**Ans**

✗ 1. Industrial and agricultural products and their listing in classified groups, area wise

✗ 2. Per capita income

✓ 3. Sources of income, vehicle registration and local taxes

✗ 4. Trend of population growth

Question ID : **630680389839**
Option 1 ID : **6306801519817**
Option 2 ID : **6306801519814**
Option 3 ID : **6306801519816**
Option 4 ID : **6306801519815**

Section : **Section B1**

**Q.1** Select the INCORRECT statement related to terminologies with its definition used in Arch construction.

**Ans**

✓ 1. Soffit: This is the lower half of the arch between the crown and skewback

✗ 2. Voussoirs: These are the wedge-shaped units forming the courses of an arch

✗ 3. Arcades: It is a row of arches supported on piers and carrying a wall over it

✗ 4. Spandril: This is space between the extrados and the horizontal line through the crown

Question ID : **630680389855**
Option 1 ID : **6306801519880**
Option 2 ID : **6306801519878**
Option 3 ID : **6306801519879**
Option 4 ID : **6306801519881**

**Q.2** A reservoir is constructed at an elevation of 550 m above mean sea level and a powerhouse is located at an elevation of 350 m above mean sea level. The water is being diverted to the powerhouse through a penstock. Which type of turbine is suitable?

**Ans**

✓ 1. Pelton turbine

✗ 2. Francis turbine

✗ 3. Kaplan turbine

✗ 4. Propeller turbine

Question ID : **630680389862**
Option 1 ID : **6306801519906**
Option 2 ID : **6306801519907**
Option 3 ID : **6306801519908**
Option 4 ID : **6306801519909**

**Q.3** A 4 m wide by 2 m deep rectangular channel is flowing fully. The bed slope of the channel is 1 in 2500. If Chezy's constant is 50, what is the discharge through the channel?

**Ans**

✔ 1. $8\ m^3/s$

✘ 2. $10\ m^3/s$

✘ 3. $12\ m^3/s$

✘ 4. $6\ m^3/s$

Question ID : **630680389864**
Option 1 ID : **6306801519917**
Option 2 ID : **6306801519916**
Option 3 ID : **6306801519915**
Option 4 ID : **6306801519914**

**Q.4** Which of the following properties of concrete facilitates high durability of concrete?

**Ans**

✘ 1. High permeability

✘ 2. High early strength of concrete

✔ 3. Low water/cement ratio

✘ 4. Flaky aggregates

Question ID : **630680389866**
Option 1 ID : **6306801519925**
Option 2 ID : **6306801519922**
Option 3 ID : **6306801519923**
Option 4 ID : **6306801519924**

**Q.5** Match the type of cement in column A with its corresponding application in column B.

| Types of cement | Applications |
|---|---|
| 1.Portland slag cement | A. Cold weather concreting works |
| 2. Low heat Portland cement | B. Offshore structures |
| 3.Rapid hardening cement | C. Resistance to corrosion of reinforcement |
| 4. Super sulphated cement | D. Water retaining structures like dams |

**Ans**

✘ 1. 1-B, 2-D, 3-A, 4-C

✔ 2. 1-C, 2-D, 3-A, 4-B

✘ 3. 1-D, 2-C, 3-A, 4-B

✘ 4. 1-C, 2-D, 3-B, 4-A

Question ID : **630680389868**
Option 1 ID : **6306801519930**
Option 2 ID : **6306801519932**
Option 3 ID : **6306801519931**
Option 4 ID : **6306801519933**

Q.6 What is the maximum shear stress developed for a wooden beam of width 100 mm and depth 250 mm, subjected to shear force of 75 kN?

Ans
1. 3.5 MPa
2. 4.0 MPa
3. 4.5 MPa
4. 5.0 MPa

Question ID : **630680389870**
Option 1 ID : **6306801519938**
Option 2 ID : **6306801519939**
Option 3 ID : **6306801519940**
Option 4 ID : **6306801519941**

Q.7 What is the purpose of a super-passage in irrigation engineering?

Ans
1. To cross the natural stream at relatively same level
2. To cross the canal below the natural stream
3. To cross the canal over the natural stream
4. To divert the water from the river to the canal

Question ID : **630680389859**
Option 1 ID : **6306801519896**
Option 2 ID : **6306801519895**
Option 3 ID : **6306801519894**
Option 4 ID : **6306801519897**

Q.8 Identify whether the following statements related to the measurement of rainfall and runoff are true/false.

1. The depth of rainfall is measured at 8:00 a.m. every day, using float type of rain gauge.
2. The approximate stream flow velocity can be determined by floats.

Ans
1. Both statements are true
2. Statement 1 is false and Statement 2 is true
3. Statement 1 is true and Statement 2 is false
4. Both statements are false

Question ID : **630680389857**
Option 1 ID : **6306801519888**
Option 2 ID : **6306801519887**
Option 3 ID : **6306801519886**
Option 4 ID : **6306801519889**

Q.9 Where are 'bullnose bricks' used in a brick masonry construction?

Ans
1. Rounded quoin ✔
2. Window joints ✘
3. Furnaces ✘
4. Towers ✘

Question ID : **630680389853**
Option 1 ID : **6306801519873**
Option 2 ID : **6306801519870**
Option 3 ID : **6306801519872**
Option 4 ID : **6306801519871**

Q.10 Calculate the maximum torque for a solid circular shaft having a polar moment of inertia of $30 \times 10^6$ $mm^4$ that can transmit, if the maximum angle of twist is 1° in a length of 1.5 m.

(Take the modulus of rigidity equal to 90 GPa)

Ans
1. $10\ \pi$ kN-m ✔
2. $15\ \pi$ kN-m ✘
3. $5\ \pi$ kN-m ✘
4. $20\ \pi$ kN-m ✘

Question ID : **630680389872**
Option 1 ID : **6306801519947**
Option 2 ID : **6306801519948**
Option 3 ID : **6306801519946**
Option 4 ID : **6306801519949**

Q.11 Two horizontal plates are placed one above the other at a distance of 2 cm, the space between them being filled with an oil of viscosity 15 poises. What is the shear stress in oil if the upper plate is moved with a velocity of 2 m/s?

Ans
1. 130 $N/m^2$ ✘
2. 120 $N/m^2$ ✘
3. 140 $N/m^2$ ✘
4. 150 $N/m^2$ ✔

Question ID : **630680389863**
Option 1 ID : **6306801519911**
Option 2 ID : **6306801519910**
Option 3 ID : **6306801519912**
Option 4 ID : **6306801519913**

**Q.12** Which of the following river training works is constructed on the upstream side of the diversion site to control the submergence of land due to rise in high flood level?

**Ans**

✗ 1. Bed pitching

✗ 2. Spur

✗ 3. River proper

✓ 4. Marginal bund

Question ID : **630680389858**
Option 1 ID : **6306801519890**
Option 2 ID : **6306801519893**
Option 3 ID : **6306801519891**
Option 4 ID : **6306801519892**

**Q.13** The command area of an irrigation canal is 4000 hectares. The intensity of irrigation of a crop is 70%. The crop requires 60 cm of water in 20 days, when the effective rainfall is recorded as 20 cm during that period. Assuming 20% losses, what is the duty at the head of the canal?

**Ans**

✗ 1. 365.6 hectare/cumec

✗ 2. 245.6 hectare/cumec

✗ 3. 325.6 hectare/cumec

✓ 4. 345.6 hectare/cumec

Question ID : **630680389860**
Option 1 ID : **6306801519901**
Option 2 ID : **6306801519898**
Option 3 ID : **6306801519899**
Option 4 ID : **6306801519900**

**Q.14** What should be the maximum aggregate crushing value used in concrete roads and pavements as per IS:383-1970?

**Ans**

✗ 1. 50%

✓ 2. 30%

✗ 3. 20%

✗ 4. 40%

Question ID : **630680389865**
Option 1 ID : **6306801519921**
Option 2 ID : **6306801519919**
Option 3 ID : **6306801519918**
Option 4 ID : **6306801519920**

**Q.15** Select the correct option related to the application of grade beams in building construction.

**Ans**

✗ 1. Provided at the lintel level of load-bearing walls of a building

✓ 2. Proved in between isolated foundation of a framed building below ground level

✗ 3. Provided at the plinth level of a framed building

✗ 4. Provided at the bottom of the foundation footing of load-bearing walls of a building

Question ID : **630680389854**
Option 1 ID : **6306801519874**
Option 2 ID : **6306801519876**
Option 3 ID : **6306801519875**
Option 4 ID : **6306801519877**

**Q.16** The following statements pertain to the roof truss.

1. In the case of a queen-post truss, the tie beam will be under tension while the straining beam and struts are under compression.
2. Due to the triangular structure of the King-post truss, the members are either under tension or compression.

Validate the statements as correct/incorrect and choose the correct answer.

**Ans**

✗ 1. Statement 1 is correct and Statement 2 is incorrect

✗ 2. Both statements are incorrect

✗ 3. Statement 1 is incorrect and Statement 2 is correct

✓ 4. Both statements are correct

Question ID : **630680389856**
Option 1 ID : **6306801519882**
Option 2 ID : **6306801519885**
Option 3 ID : **6306801519883**
Option 4 ID : **6306801519884**

**Q.17** A hollow shaft produces a torque of 10 kN-m at 120 rpm. Find the power the shaft can transmit?

**Ans**

✓ 1. $40\ \pi$ kW

✗ 2. $45\ \pi$ kW

✗ 3. $50\ \pi$ kW

✗ 4. $35\ \pi$ kW

Question ID : **630680389871**
Option 1 ID : **6306801519943**
Option 2 ID : **6306801519944**
Option 3 ID : **6306801519945**
Option 4 ID : **6306801519942**

**Q.18** Identify whether the following statements related to concrete are true/false.

1. In principle, as the compaction factor increases, the slump decreases.

2. Slump and slump flow of concrete are both measured in mm or cm.

**Ans**

✗ 1. Statement 1 is true and Statement 2 is false

✓ 2. Statement 1 is false and Statement 2 is true

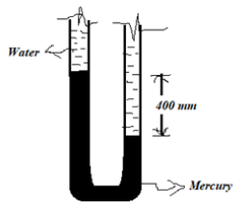
✗ 3. Both statements are false

✗ 4. Both statements are true

Question ID : **630680389867**
Option 1 ID : **6306801519927**
Option 2 ID : **6306801519926**
Option 3 ID : **6306801519929**
Option 4 ID : **6306801519928**

**Q.19** When the pressure between two points is measured using a mercury-water manometer, it shows a gauge difference of 400 mm, as in the given figure. What will be the difference in pressure?

(Take the specific gravity of mercury as 13.6)




**Ans**

✗ 1. 14.6 m of water

✗ 2. 5.84 m of water

✓ 3. 5.04 m of water

✗ 4. 12.6 m of water

Question ID : **630680389861**
Option 1 ID : **6306801519905**
Option 2 ID : **6306801519903**
Option 3 ID : **6306801519902**
Option 4 ID : **6306801519904**

**Q.20** A steel rod 1 m long and 20 mm × 20 mm in cross-section is subjected to a tensile force of 40 kN. What is the elongation of the rod, if the modulus of elasticity for the rod material is 200 GPa.

**Ans**

✗ 1. 0.95 mm

✗ 2. 0.25 mm

✓ 3. 0.5 mm

✗ 4. 0.75 mm

Question ID : **630680389869**
Option 1 ID : **6306801519937**
Option 2 ID : **6306801519934**
Option 3 ID : **6306801519935**
Option 4 ID : **6306801519936**

Section : **Section B2**

**Q.1** Which Act/law was passed by the government of India to protect the victims of accidents and their families from hardships out of and in the course of employment?

**Ans**

✗ 1. The Health and Safety at Work Act, 1974

✓ 2. Workmen Compensation Act, 1923

✗ 3. Contract Labour Laws, 1970

✗ 4. Minimum Wage Act

Question ID : **630680389887**
Option 1 ID : **6306801520009**
Option 2 ID : **6306801520007**
Option 3 ID : **6306801520008**
Option 4 ID : **6306801520006**

**Q.2** What is the maximum bending moment per metre run and the diagonal shear for a reinforced cement concrete footing for 1 m wide concrete wall carrying a load of 800 kN/m? (Given allowable soil pressure is 200 kN/$m^2$ and depth of 0.5 m)

**Ans**

✗ 1. 235 kN-m per m and 400 kN

✓ 2. 225 kN-m per m and 200 kN

✗ 3. 220 kN-m per m and 600 kN

✗ 4. 215 kN-m per m and 180 kN

Question ID : **630680389882**
Option 1 ID : **6306801519989**
Option 2 ID : **6306801519988**
Option 3 ID : **6306801519987**
Option 4 ID : **6306801519986**

**Q.3** According to IS:3629-1986, the trade names and the botanical names of trees are given as options. Select the correct option in which the timbers of these trees are used for permanent structures.

**Ans**

✗ 1.
Deodar (*Cedtus deodara*), Teak (*Tectona grandis*), Satinwood (*Chloroxylon swielmia*), Ebony (*Diospyros pyrrhocarpa*)

✓ 2.
Deodar (*Cedtus deodara*), Teak (*Tectona grandis*), Indian rose wood (*Dalbet gia latifolia*), Sal (*Shorea robusta*)

✗ 3.
Indian rose wood (*Dalbet gia latifolia*), Sal (*Shorea robusta*); Casuarina (*Casuarina equisetifolia*), Kasod (*Cassia siamea*)

✗ 4.
Casuarina (*Casuarina equisetifolia*), Satinwood (*Chloroxylon swielmia*), Ebony (*Diospyros pyrrhocarpa*), Kasod (*Cassia siamea*)

Question ID : **630680389878**
Option 1 ID : **6306801519970**
Option 2 ID : **6306801519973**
Option 3 ID : **6306801519971**
Option 4 ID : **6306801519972**

Q.4 A sample of water has calcium content of 60 mg/l as $CaCO_3$ and magnesium content of 80 mg/l as $CaCO_3$. What is the total hardness of water?

Ans
1. 240 mg/l
2. 200 mg/l
3. 140 mg/l
4. 40 mg/l

Question ID : **630680389874**
Option 1 ID : **6306801519957**
Option 2 ID : **6306801519956**
Option 3 ID : **6306801519955**
Option 4 ID : **6306801519954**

Q.5 Which of the following drilling methods is more suitable for use in glacial tills containing boulders?

Ans
1. Percussion boring
2. Rotary drilling
3. Wash boring
4. Core drilling

Question ID : **630680389881**
Option 1 ID : **6306801519982**
Option 2 ID : **6306801519985**
Option 3 ID : **6306801519983**
Option 4 ID : **6306801519984**

Q.6 A simply supported beam of a span 3 m is subjected to a central load of 10 kN. What is the maximum slope and deflection of the beam, if the moment of inertia is $10 \times 10^6$ $mm^4$ and Young's modulus of elasticity is 200 GPa?

Ans
1. Slope = 0.0022 rad and deflection = 3.25 mm
2. Slope = 0.0018 rad and deflection = 2.31 mm
3. Slope = 0.0012 rad and deflection = 1.81 mm
4. Slope = 0.0028 rad and deflection = 2.81 mm

Question ID : **630680389885**
Option 1 ID : **6306801520001**
Option 2 ID : **6306801520000**
Option 3 ID : **6306801519998**
Option 4 ID : **6306801519999**

Q.7 Which of the following is NOT an application of flow net?

Ans
1. Determination of seepage through earthen dam
2. Determination of passive earth pressure
3. Determination of hydrostatic pressure
4. Determination of exit gradient

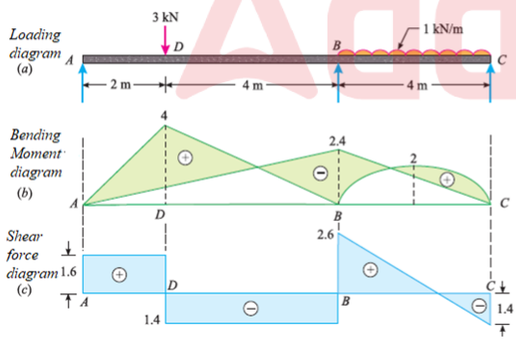
Question ID : **630680389879**
Option 1 ID : **6306801519974**
Option 2 ID : **6306801519977**
Option 3 ID : **6306801519976**
Option 4 ID : **6306801519975**

Q.8 Which of the following intake structure types suitability is true in case of a water supply scheme?

Ans
1. Submersible type of intake structures are normally used for lake-based water supply.
2. A siphonic intake from the middle of the canal is used for augmenting the water supply from the canal.
3. A masonry or RCC intake tower (or intake well) is placed downstream of the gravity dam for augmenting water supply.
4. An underground intake chamber consisting of stone masonry in the bed of the river is used for river-based water supply.

Question ID : **630680389875**
Option 1 ID : **6306801519961**
Option 2 ID : **6306801519960**
Option 3 ID : **6306801519958**
Option 4 ID : **6306801519959**

Q.9 A continuous beam ABC is subjected to loads and its shear force and bending moment diagrams are given below. What is the fixing moment at support B?




Ans
1. −2.4 kN-m
2. 1.4 kN-m
3. −2.8 kN-m
4. 1.8 kN-m

Question ID : **630680389886**
Option 1 ID : **6306801520004**
Option 2 ID : **6306801520002**
Option 3 ID : **6306801520005**
Option 4 ID : **6306801520003**

Q.10 Which type of gauge in Indian railways has a width of 1676 mm between two rails?

Ans
1. Broad gauge
2. Meter gauge
3. Narrow gauge
4. Cape gauge

Question ID : **630680389892**
Option 1 ID : **6306801520027**
Option 2 ID : **6306801520028**
Option 3 ID : **6306801520029**
Option 4 ID : **6306801520026**

Q.11 A fixed beam AB of span 4 m is carrying a point load of 100 N at the centre. What is the fixed end moment at support A and B?

Ans
1. $M_A = M_B = -12$ N-m
2. $M_A = M_B = -50$ N-m
3. $M_A = M_B = -3$ N-m
4. $M_A = M_B = -6$ N-m

Question ID : **630680389883**
Option 1 ID : **6306801519991**
Option 2 ID : **6306801519992**
Option 3 ID : **6306801519990**
Option 4 ID : **6306801519993**

Q.12 A hospital is to be constructed for a total number of 100 beds and the financial requirement for each bed is ₹1,00,000. But there is no drawing available at the beginning. Which financial estimate method is applicable to the construction of the proposed hospital?

Ans
1. Preliminary estimate
2. Revised estimate
3. Ballpark estimate
4. Detailed estimate

Question ID : **630680389888**
Option 1 ID : **6306801520011**
Option 2 ID : **6306801520013**
Option 3 ID : **6306801520010**
Option 4 ID : **6306801520012**

Q.13 What is the scale of water that is required for a city or town having a population of 50,000 to meet fire demand, as recommended by the Indian Standard, IS:9668-1990?

Ans
✔ 1. 1800 litres per minute
✘ 2. 1500 litres per minute
✘ 3. 2200 litres per minute
✘ 4. 2500 litres per minute

Question ID : **630680389873**
Option 1 ID : **6306801519951**
Option 2 ID : **6306801519950**
Option 3 ID : **6306801519952**
Option 4 ID : **6306801519953**

Q.14 Identify, on the basis of application, whether the following statements regarding quality measures in the construction industry are true/false.

1. Quality control (QC) tools are used at the project level and deal with conformance to the plans and specs through submittals, mock-ups, shop drawings, inspections, and testing.
2. Quality assurance (QA) tools are used at the process level and deal with policies and procedures associated with hiring, training, safety, subcontracting, and procurement.

Ans
✔ 1. Both statements are true
✘ 2. Statement 1 is true and Statement 2 is false
✘ 3. Statement 1 is false and Statement 2 is true
✘ 4. Both statements are false

Question ID : **630680389890**
Option 1 ID : **6306801520021**
Option 2 ID : **6306801520018**
Option 3 ID : **6306801520019**
Option 4 ID : **6306801520020**

Q.15 In which of the following bearing capacity theories, the shear strength of soil above the footing base was also accounted for in the analysis?

Ans
✘ 1. Terzaghi's bearing capacity theory
✘ 2. Vesic's bearing capacity theory
✔ 3. Meyerhof's bearing capacity theory
✘ 4. Hansen's bearing capacity theory

Question ID : **630680389880**
Option 1 ID : **6306801519978**
Option 2 ID : **6306801519980**
Option 3 ID : **6306801519979**
Option 4 ID : **6306801519981**

Q.16 What form of burnt bricks are used to construct octagonal pillars?

Ans
1. King closer bricks
2. Bullnose bricks
3. Compass bricks
4. Double cant bricks

Question ID : **630680389877**
Option 1 ID : **6306801519966**
Option 2 ID : **6306801519968**
Option 3 ID : **6306801519969**
Option 4 ID : **6306801519967**

Q.17 Identify whether the following statements with reference to project planning methods are true/false.

1. Gantt charts are not very good at showing the impact that a delay in one activity might have on another activity or on the overall duration of the project.
2. Network diagrams show any delay in the project activity and its impact on the other or overall duration of the project.

Ans
1. Both statements are true
2. Both statements are false
3. Statement 1 is false and Statement 2 is true
4. Statement 1 is true and Statement 2 is false

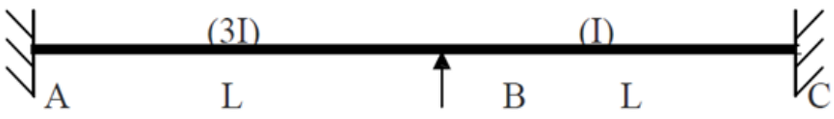
Question ID : **630680389889**
Option 1 ID : **6306801520016**
Option 2 ID : **6306801520017**
Option 3 ID : **6306801520015**
Option 4 ID : **6306801520014**

Q.18 The stopping sight distance on a level highway road is 61.4 m, done for two-way traffic with two lanes. What is the stopping sight distance for the highway if two-way traffic with a single lane is considered?

Ans
1. 61.4 m
2. 150.8 m
3. 30.7 m
4. 122.8 m

Question ID : **630680389891**
Option 1 ID : **6306801520023**
Option 2 ID : **6306801520025**
Option 3 ID : **6306801520022**
Option 4 ID : **6306801520024**

Q.19 The distribution factor for the portion BC from the given beam is:




Ans
✔ 1. 0.25
✘ 2. 0.75
✘ 3. 1.0
✘ 4. 0.5

Question ID : **630680389884**
Option 1 ID : **6306801519994**
Option 2 ID : **6306801519996**
Option 3 ID : **6306801519997**
Option 4 ID : **6306801519995**

Q.20 Which type of pipes are well suited for laying in ground liable to subsidence in case of water supply scheme?

Ans
✘ 1. Cast iron pipe
✘ 2. PVC pipes
✘ 3. Asbestos cement pipes
✔ 4. Steel pipe

Question ID : **630680389876**
Option 1 ID : **6306801519962**
Option 2 ID : **6306801519963**
Option 3 ID : **6306801519965**
Option 4 ID : **6306801519964**

Section : **Section B3**

Q.1 A tank is excavated in a level ground to a depth of 8 m with uniform side slopes. The top of the tank at ground level is rectangular in shape of size 40 × 20 m, while the bottom is of size 24 × 12 m. Compute the volume of earthwork by the trapezoidal rule.

Ans
✘ 1. 4152 $m^3$
✘ 2. 4312 $m^3$
✘ 3. 4252 $m^3$
✔ 4. 4352 $m^3$

Question ID : **630680389902**
Option 1 ID : **6306801520066**
Option 2 ID : **6306801520068**
Option 3 ID : **6306801520067**
Option 4 ID : **6306801520069**

**Q.2** Which of the following statements related to properties of materials used in earth and gravel roads as per IRC:SP:77-2008 is correct?

1. The maximum liquid limit of the fines (soil) used for the wearing course of an earthen road in a seasonal wet tropic climate is 40%.
2. Wet Aggregate Impact Value should not exceed 40 and 30 when used in base and surfacing, respectively.

**Ans**

✗ 1. Statement 1 is incorrect and Statement 2 is correct

✗ 2. Both statements are incorrect

✓ 3. Both statements are correct

✗ 4. Statement 1 is correct and Statement 2 is incorrect

Question ID : **630680389894**
Option 1 ID : **6306801520035**
Option 2 ID : **6306801520037**
Option 3 ID : **6306801520036**
Option 4 ID : **6306801520034**

**Q.3** The total cost of a new building is ₹1,70,000. What is the depreciation cost of the building after 20 years by straight line method if scrap value is ₹10,000, assuming the life of the building is 80 years?

**Ans**

✗ 1. ₹40,000

✓ 2. ₹1,30,000

✗ 3. ₹1,50,000

✗ 4. ₹1,60,000

Question ID : **630680389900**
Option 1 ID : **6306801520058**
Option 2 ID : **6306801520060**
Option 3 ID : **6306801520059**
Option 4 ID : **6306801520061**

**Q.4** What is the value of the maximum slenderness ratio of a tension member that is used as per IS:800-2007 for the compression flange of a beam against lateral torsional buckling?

**Ans**

✗ 1. 180

✗ 2. 250

✗ 3. 400

✓ 4. 300

Question ID : **630680389895**
Option 1 ID : **6306801520038**
Option 2 ID : **6306801520039**
Option 3 ID : **6306801520041**
Option 4 ID : **6306801520040**

**Q.5** Which of the following estimates is applicable for an additional work that is necessary for the project while in progress?

**Ans**

✗ 1. Revised estimate

✓ 2. Supplementary estimate

✗ 3. Detailed estimate

✗ 4. Quantity estimate

Question ID : **630680389899**
Option 1 ID : **6306801520055**
Option 2 ID : **6306801520056**
Option 3 ID : **6306801520057**
Option 4 ID : **6306801520054**

**Q.6** According to IS:800-2007, the thickness of flat lacing bars should NOT be less than _____ of its effective length for single lacings.

**Ans**

✗ 1. one-twentieth

✗ 2. one-sixtieth

✗ 3. one-thirtieth

✓ 4. one-fortieth

Question ID : **630680389896**
Option 1 ID : **6306801520042**
Option 2 ID : **6306801520045**
Option 3 ID : **6306801520043**
Option 4 ID : **6306801520044**

**Q.7** The effective length (l) of a compression steel member of actual length (L), effectively held in position and restrained against rotation at one end and restrained against rotation at the other end but not held in position, as per IS:800-2007 is:

**Ans**

✗ 1. 0.65 L

✗ 2. 1.5 L

✓ 3. 1.2 L

✗ 4. 2.0 L

Question ID : **630680389897**
Option 1 ID : **6306801520046**
Option 2 ID : **6306801520048**
Option 3 ID : **6306801520047**
Option 4 ID : **6306801520049**

Q.8 The sleeper density is M + 7 on a broad-gauge route, where M is the length of the rail. How many sleepers are required for 1 km length of track?

(Assume the length of the rail is 13 m)

Ans
1. 1525
2. 1539
3. 1520
4. 1510

Question ID : **630680389893**
Option 1 ID : **6306801520033**
Option 2 ID : **6306801520032**
Option 3 ID : **6306801520031**
Option 4 ID : **6306801520030**

Q.9 Match the symbols indicating the type of steel connection in column A with their names in column B.

| Symbol of weld connection | Name of connection |
|---|---|
| 1.  | A. Bevel weld |
| 2.  | B. Plug weld |
| 3.  | C. Fillet weld |
| 4.  | D. Spot weld |

Ans
1. 1-D, 2-A, 3-C, 4-B
2. 1-C, 2-A, 3-D, 4-B
3. 1-C, 2-A, 3-B, 4-D
4. 1-C, 2-D, 3-A. 4-B

Question ID : **630680389898**
Option 1 ID : **6306801520051**
Option 2 ID : **6306801520052**
Option 3 ID : **6306801520053**
Option 4 ID : **6306801520050**

**Q.10** Which the following statements applicable to lead and lift as per IS:1200-part-1-1992 are correct?

1. Lead: Distances not exceeding 250 m should be measured in units of 50 m.
2. Lift: Lift should be measured in units of 1.5 m from the ground level.

**Ans**

✗ 1. Statement 1 is incorrect and Statement 2 is correct

✓ 2. Both statements are correct

✗ 3. Both statements are incorrect

✗ 4. Statement 1 is correct and Statement 2 is incorrect

Question ID : **630680389901**
Option 1 ID : **6306801520063**
Option 2 ID : **6306801520064**
Option 3 ID : **6306801520065**
Option 4 ID : **6306801520062**