# Teachingninja.in

⭐ **Latest Govt Job updates**

⭐ **Private Job updates**

⭐ **Free Mock tests available**

**Visit - teachingninja.in**

# Maharashtra PWD JE

## Previous Year Paper
### Paper-II 23 June, 2018

1    Which one of the following is correct formula for calculation of plasticity index of soil mass?
Plasticity index ( P.I )
Liquid limit ( $W_L$ % )
Plastic limit (WP %)

a)    P.I = $W_L$ % + $W_P$ %
b)    P.I = $W_L$ % × $W_P$ %
c)    P.I = $W_L$ % - $W_P$ %

$$P.I = \frac{W_L\%}{W_P\,\%}$$
d)

a

b

c

d

Answer:    c

2                    Choose the part which has an error.

                     A.Some people

                     B.have a habit

                     C.of wearing there heart

                     D.on their sleeves.

Answer:              C.of wearing there heart

3    What are the types of turbine according to the head at the inlet of the turbine?
     1. high head turbine
     2. medium head turbine
     3. low head turbine
     4. mixed head turbine

     A.Only 1

     B.Both 1 and 2

     C.Only 1, 2 and 3

     D.All 1, 2, 3, 4

Answer:    C.Only 1, 2 and 3

4    A real fluid in which the shear stress is directly proportional to the rate of shear strain is
     called.

     A.Newtonian fluid

     B.Non – Newtonian fluid

     C.Ideal fluid

     D.None of the above

Answer:    A.Newtonian fluid

5    Which of the following relationship stands TRUE?

     A.   Co-efficient of discharge = Co-efficient of velocity x Co-efficient of contraction

     B.   Co-efficient of velocity = Co-efficient of discharge x Co-efficient of contraction

     C.   Co-efficient of contraction = Co-efficient of velocity x Co-efficient of discharge

     D.    Co-efficient of contraction = Co-efficient of velocity / Co-efficient of discharge

Answer:    A.   Co-efficient of discharge = Co-efficient of velocity x Co-efficient of contraction

6          खालीलपैकी सर्वात मोठा अपूर्णांक कोणता आहे ?

           Which of the following fractions is the largest?

           A.25/26
           A.25/26

           B.20/21
           B.20/21

           C.25/30
           C.25/30

           D.21/25
           D.21/25

Answer:    A.25/26
           A.25/26

7          Which of the following relationship holds good?

           A.Kinematic viscosity = dynamic viscosity x density

           B.    Kinematic viscosity = dynamic viscosity/density

           C.     Kinematic viscosity = dynamic viscosity x specific gravity

           D.    Kinematic viscosity = dynamic viscosity / specific gravity

Answer:    B.    Kinematic viscosity = dynamic viscosity/density

8. A bar of uniform cross section "A" and length "L" free to expand from both end is heated to a temperature $T^0$. The thermal stress induced in bar is (coefficient of expansion = $\alpha$)

a) $\dfrac{\alpha T}{A}$

b) $\dfrac{\alpha T}{A \in}$

c) $\dfrac{\alpha L T}{A \in}$

d) Zero

a

b

c

d

Answer: d

9. In which one of the following plans, star & grid pattern was adopted?

A.Nagpur road plan

B.Bombay road plan

C.Lucknow road plan

D.None of the above

Answer: A.Nagpur road plan

10. From the pairs of words given, choose the one that fills the blanks most appropriately. Critics charge that the "war on terrorism" is an ideology of fear and _____ that creates enemies and promotes _____ rather than mitigating acts of terror and strengthening security.

A. courage, racism

| | |
|---|---|
| | B. repression, violence |
| | C. terror, anxiety |
| | D. change, hatred |
| Answer: | B. repression, violence |

11　एका फुलांच्या टोपलीत 3 पांढरे, 4 लाल आणि 5 पिवळे गुलाब ठेवले आहेत.
टोपलीतून कमीतकमी किती गुलाब बाहेर काढले असता निश्चितपणे 1 लाल गुलाब आणि 1 पांढरा गुलाब निघू शकतील ?

A flower basket contains 3 white, 4 red and 5 yellow roses.
What is the minimum number of roses that must be drawn from the basket so that you definitely draw a red rose and a white rose?

| | |
|---|---|
| | A.9 <br> A.9 |
| | B.8 <br> B.8 |
| | C.10 <br> C.10 |
| | D.5 <br> D.5 |
| Answer: | C.10 <br> C.10 |

12　The maximum stress set up in a body in sudden loading , $\sigma_s$ is related to maximum stress in graudual loading , $\sigma_G$ as

| | |
|---|---|
| | A.$\sigma_G = 2\ \sigma_s$ |
| | B.$\sigma_s = 2\ \sigma_G$ |
| | C.$\sigma_G = \sigma_s$ |

D.$\sigma_s = 1.5\,\sigma_G$

Answer: B.$\sigma_s = 2\,\sigma_G$

| 13 | In case of pipes in series, |
|---|---|

A.Discharge is constant

B.Head loss is constant

C.Velocity is constant

D.Both Head loss and Velocity is constant

| Answer: | A.Discharge is constant |
|---|---|

| 14 | In an examination, Soni scored higher than Mona but lower than Pushpa. Pushpa got five marks less than Shobha whereas Shobha and Vibha got equal marks. Who has got the lowest score in the examination? |
|---|---|

A.सोनी
A.Soni

B.मोना
B.Mona

C.पुष्पा
C.Pushpa

D.शोभा
D.Shobha

| Answer: | B.मोना<br>B.Mona |
|---|---|

| 15 | If there is a presence of compact sand deposit extending to great depth , then which one of the following type of foundation will be suitable ? |
|---|---|

A.Spread footing

B.Under reamed piles

C.Raft foundation

D.Deep foundation

Answer:    A.Spread footing

16    Which one of the following piles are used to transfer heavy loads to strong stratum below a weak stratum ?

A.Point bearing piles

B.Sheet piles

C.Compaction piles

D.Batter piles

Answer:    A.Point bearing piles

17    खालीलपैकी सर्वात मोठा पर्याय कोणता आहे ?

Which of the following options is the largest?

A.25 च्या 10% + 200 च्या 15% + 300 च्या 30%
A.10% of 25 + 15% of 200 + 30% of 300

B.25 च्या 20% + 200 च्या 25% + 150 च्या 5%
B.20% of 25 + 25% of 200 + 5% of 150

C.100 च्या 10% + 150 च्या 15% - 300 च्या 30%
C.10% of 100 + 15% of 150 - 30% of 300

D.100 च्या 20% + 150 च्या 25% + 250 च्या 5%
D.20% of 100 + 25% of 150 + 5% of 250

Answer:    A.25 च्या 10% + 200 च्या 15% + 300 च्या 30%
           A.10% of 25 + 15% of 200 + 30% of 300

18      If, L = length of the crest, H = height of water above the crest, the weir to be a broad-crested weir should have

A. 0.25H < L

B. 0.50H < L

C. 0.75H < L

D. H < L

Answer:   B. 0.50H < L

19      At which one of the following location of simply supported plate girder, horizontal stiffeners are provided?

A.   At supports

B.   Away from centre of span

C.   Away from supports

D.   Longitudinally somewhere in the compression flange

Answer:   D.   Longitudinally somewhere in the compression flange

20

Which one of the following option is correct with respect to well graded gravel?
$c_u$: coefficient of uniformity
$c_c$: coefficient of curvature

a)      $C_u > 4$          $1 < C_c < 3$
b)      $C_u < 4$          $1 < C_c < 3$
c)      $C_u > 4$          $C_c < 1$
d)      $C_u < 4$          $C_c > 3$

a

b

c

d

Answer:    a

21

Which one of the following test is conducted on bitumen to evaluate the consistency property?

A.Ductility test

B.Penetration test

C.Flash & fire point test

D.Viscosity test

Answer:    D.Viscosity test

22

If the width of footing resting on sandy soil increases , then what will happen to the ultimate load carrying capacity of footing ?

A.Increase

B.Decrease

C.Remain same

D.None of the above

Answer: A.Increase

---

23 खाली दिलेल्या पर्यायातून व्याकरणाच्या दृष्टीने योग्य असलेला पर्याय निवडा.

A.दिवाळखोरी कायद्यातील सुधारणांना मंजुरी देत केंद्रातील मोदी सरकारने घर खरेदी करणाऱ्या ग्राहकांना मोठा दिलासा दिला आहे.

B.कायद्यातील नव्या बदलांनुसार, एखादी बांधकाम कंपनी दिवाळखोरीत निघाली असल्यास तिच्या संपत्तीत घरखरेदीदारांनाही वाटा मिळत असेल.

C.बांधकाम कंपनी दिवाळखोरीत निघाली तिच्या संपत्तीच्या लिलावातून बँकांना वाटा देण्याची तरतूद कायद्यात होत असे.

D.नवीन बदलानुसार संबंधित कंपनीच्या संपत्तीत घर खरेदीदारांचाही वाट असणार आहे. संबंधित कंपनीच्या लिलावमध्ये बँकांना वाटे देण्याची तरतूद कायद्यात असेल.

Answer: A.दिवाळखोरी कायद्यातील सुधारणांना मंजुरी देत केंद्रातील मोदी सरकारने घर खरेदी करणाऱ्या ग्राहकांना मोठा दिलासा दिला आहे.

---

24 In which one of the following case, base failure of finite slope is most likely to occur?

A.Soil above & below the toe of slope have same strength

B.Soil above the toe of slope is comparatively weaker

C.Soil above the toe of slope is comparatively stronger

D.None of the above

Answer: C.Soil above the toe of slope is comparatively stronger

| 25 | खाली दिलेल्या पर्यायातून प्रश्नातील शब्दासाठी विरुद्धार्थी शब्द निवडा. मळभ |
|---|---|
| | A.निरभ्र |
| | B.ढगाळ |
| | C.रटाळ |
| | D.गढूळ |
| Answer: | A.निरभ्र |

| 26 | Moment of inertia of a triangular section with base "b" and height "h" about centre of gravity will be |
|---|---|
| | A. $bh^3/3$ |
| | B. $bh^3/12$ |
| | C.$bh^3/36$ |
| | D. $bh^3/48$ |
| Answer: | C.$bh^3/36$ |

27    Which one of the following is the correct formula for calculation of submerged unit weight of soil mass?

a) $\gamma_{sat} = \left(\dfrac{G-e}{1+e}\right)\gamma_w$

b) $\gamma_{sat} = \left(\dfrac{G+e}{1+e}\right)\gamma_w$

c) $\gamma_{sat} = \left(\dfrac{G-1}{1+e}\right)\gamma_w$

d) $\gamma_{sat} = \left(\dfrac{G+1}{1+e}\right)\gamma_w$

a

b

c

d

Answer:   c

28    Which one of the following is the standard plate size in plate bearing test?

A.75cm dia

B.30cm dia

C.45cm dia

D.90cm dia

Answer:   A.75cm dia

29    Considering theory of filtration, "Schmutzdecke" or "dirty skin" is formed in which process?

A.   Mechanical straining

B.    Flocculation and sedimentation

C. Biological metabolism

D. Electrolytic changes

Answer: C. Biological metabolism

30  Which one of the following test is conducted to evaluate the weathering property of aggregate ?

A.Crushing test

B.Abrasion test

C.Soundness test

D.Angularity test

Answer: C.Soundness test

31  For a linear elastic isotropic & homogenous material, how many number of independent elastic constant are present ?

A.1

B.2

C.3

D.4

Answer: B.2

| 32 | पाच रु.1 ची नाणी, पाच 50 पैशाची नाणी, पाच 25 पैशाची नाणी, व एक 10 पैशाचे नाणे हे A, B, C, व D ह्या चार मित्रांमध्ये अश्या प्रकारे वाटण्यात आली कि जेणेकरून प्रत्येकाच्या वाटयाला समान संख्येची नाणी आली. जर A कडे जास्तीत जास्त रक्कम असण्याची शक्यता असेल आणि B कडे कमीत कमी रक्कम असण्याची शक्यता असेल तर, |
|---|---|

5 Re.1 coins, five 50 paise coins, five 25 paise coins, and one 10 paise coin, are distributed amongst four friends A, B, C, and D such that each of them get equal number of coins.
If A has the maximum amount possible and B the minimum amount possible, then

A.C कडे D पेक्षा जास्त रक्कम असेल
A.C has more money than D

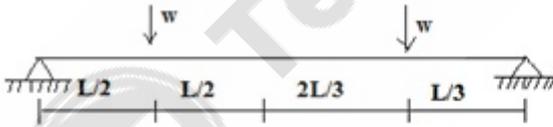B.C कडे D एवढीच रक्कम जमा असेल
B.C has as much money as D

C.C व D कडे एकत्र मिळून जी रक्कम जमा असेल तेवढीच रक्कम A कडे असेल
C.C and D together have as much money as A

D.D कडे कमीत कमी रु.2 एवढी रक्कम जमा असेल
D.D has at least Rs.2

| Answer: | C.C व D कडे एकत्र मिळून जी रक्कम जमा असेल तेवढीच रक्कम A कडे असेल |
|---|---|
| | C.C and D together have as much money as A |

| 33 | Consider the continuous beam with constant EI as shown in the figure below |
|---|---|



Collapse load for the beam is

(a) $\frac{6M_P}{L}$

(b) $\frac{12M_P}{L}$

(c) $\frac{M_P}{L}$

(d) $\frac{10M_P}{L}$

a

b

c

d

Answer: a

34    Which one of the following is correct formula for calculating toughness index of clayey soil ?

A.Flow index / Plasticity index

B.Plasticity index / Flow index

C.Flow index + Plasticity index

D.Flow index × Plasticity index

Answer:    B.Plasticity index / Flow index

35    1 kg (f) is equals to

A.100 N

B.150 N

C.9. 807 N

D.98 N

Answer:    C.9. 807 N

36    चार व्यक्ती A, B, C आणि D पैकी एक शिक्षक आहे व कॅरम आणि क्रिकेट खेळतो. A आणि B डॉक्टर
      आहेत. A पोलो हा खेळ खेळतो. दोन्ही डॉक्टर फुटबॉल खेळतात. D एक वकील आहे. एक डॉक्टर बुध्दिबळ
      देखील खेळतो. वकील कॅरम आणि फुटबॉल खेळतो. सर्व चार व्यक्ती प्रत्येकी दोन खेळ खेळतातच आणि
      कोणतातरी एक व्यवसाय करतातच.
      व्यक्तींपैकी कोण व्यक्ती फुटबॉल खेळत नाही?

      There are four persons A, B, C and D. One of them is a lecturer and plays carrom and
      cricket. A and B are doctors. A plays polo. Both the doctors play football. D is a lawyer. One
      doctor also plays chess. The lawyer plays carrom and plays football. All four people play
      two games each and follow one profession.
      Which one of these people does not play football?


      A.शिक्षक
      A.Lecturer


      B.डॉक्टर
      B.Doctor


      C.वकील
      C.Lawyer


      D.सांगू शकत नाही
      D.Can't say


Answer:  A.शिक्षक
         A.Lecturer



37    Which one of the following is the correct formula for calculation of water content ?

      Ww : weight of water
      W : overall weight of soil mass
      Ws : weight of solids



      A.Ww / W


      B.Ww / Ws


      C.Ws /W


      D.Ws /Ww

| | |
|---|---|
| Answer: | B.Ww / Ws |

| 38 | The phenomenon of rise or fall of a liquid surface in a small tube relative to the adjacent general level of liquid is |
|---|---|

A.Capillarity

B.Buoyancy

C.Drafting

D.Viscosity

| Answer: | A.Capillarity |
|---|---|

| 39 | खाली दिलेल्या पर्यायातून प्रश्नातील शब्दासाठी समानार्थी शब्द निवडा. विस्मयकारक |
|---|---|

A.कमनीय

B.मनोहर

C.मनोवेधक

D.अद्भुत

| Answer: | D.अद्भुत |
|---|---|

| 40 | As per assumption of theory of bending, the beam is subjected to |
|---|---|

A. Pure bending

B.Pure shear

C. Pure torsion

D.   Simple shear

Answer: A. Pure bending

41  For conducting heavy compaction proctor test as per Indian standard, what should be the value of free fall of hammer ( in mm ) ?

A.304.8

B.457.2

C.310

D.450

Answer: D.450

42  The maximum ending moment for a simply supported beam of length "L" carrying uniformly distributive load (W) per unit length is given by: (Consider UDL over whole span)

A. $WL^2 / 6$

B. $WL^2 / 8$

C. $WL^3 / 12$

D.WL / 2

Answer: B. $WL^2 / 8$

43  Which one of the following shape of transition curve is recommended by Indian road congress?

A.Circular

B.Spiral

C.Parabolic

D.Lemniscates

Answer:   B.Spiral

44          In Mohr Circle shear stresses on planes at right angles to each other are

        A.  Numerically equal but of opposite sign

        B.   Numerically unequal and of opposite sign

        C.Numerically equal and of same sign

        D.   Numerically unequal but of same sign

Answer:     A.  Numerically equal but of opposite sign

45          खालीलपैकी सर्वात मोठा पर्याय कोणता आहे ?

            Which of the following options is the largest?

            A.$5 - 15 + 10 - 15 - 10 - 5 + 2 + 4 + 8 + 10$
            A.$5 - 15 + 10 - 15 - 10 - 5 + 2 + 4 + 8 + 10$

            B.$5 + 12 + 10 + 15 - 10 - 5 + 12 + 4 + 8 - 10$
            B.$5 + 12 + 10 + 15 - 10 - 5 + 12 + 4 + 8 - 10$

            C.$15 + 5 - 10 - 12 + 10 - 5 - 2 - 4 + 8 + 10$
            C.$15 + 5 - 10 - 12 + 10 - 5 - 2 - 4 + 8 + 10$

            D.$15 - 5 + 10 - 15 - 10 - 5 - 2 - 4 + 8 + 10$
            D.$15 - 5 + 10 - 15 - 10 - 5 - 2 - 4 + 8 + 10$

Answer:     B.$5 + 12 + 10 + 15 - 10 - 5 + 12 + 4 + 8 - 10$
            B.$5 + 12 + 10 + 15 - 10 - 5 + 12 + 4 + 8 - 10$

46          Liquefaction under seismic force is likely to occur in which one of the following type of soil?

            A.Loose saturated sand

B.Dense sand

C.Clays

D.Rocky strata

Answer: A.Loose saturated sand

---

47  ६०० ह्या अंकाच्या ५% च्या २५% किती होतात ?

What is 5% of 25% of 600?

A.६०० च्या १०% च्या १२.५%
A.10% of 12.5% of 600

B.३०० च्या १०% च्या १२.५%
B.10% of 12.5% of 300

C.९०० च्या ५% च्या १२.५%
C.5% of 12.5% of 900

D.१०० च्या १०% च्या ५०%
D.10% of 50% of 100

Answer:  A.६०० च्या १०% च्या १२.५%
A.10% of 12.5% of 600

---

48  On the basis of which one of the following desire line are drawn?

A.Traffic volume studies

B.Traffic capacity studies

C.Origin & destination studies

D.Traffic density studies

Answer:  C.Origin & destination studies

| 49 | As per IRC recommendations, what should be the width of carriage way for a single lane roads? |
|----|---|

A.3.75m

B.3.5m

C.7m

D.5.5m

| Answer: | A.3.75m |
|---------|---------|

| 50 | Which is mostly suitable for concrete gravity dams especially when the spillway is located within the dam body in the same valley? |
|----|---|

A.  Chute spillway

B.  Trough spillway

C.  Ogee spillway

D.  Waste weir

| Answer: | C.  Ogee spillway |
|---------|-------------------|

| 51 | There are four words in a set. Select the odd one out. |
|----|---|

A. Avid

B. Keen

C. Enthusiastic

D. Kin

| Answer: | D. Kin |
|---------|--------|

| 52 | The deformation of a bar under its own weight as compared to that when subjected to a direct axial load equals to its own weight will be |
|---|---|

A. One-fourth

B. Half

C. Same

D. Double

| Answer: | B. Half |
|---|---|

| 53 | Constant head permeability test is conducted for |
|---|---|

A.Fine grained soil

B.Coarse grained soil

C.For both fine & Coarse grained soils

D.None of the above

| Answer: | B.Coarse grained soil |
|---|---|

| 54 | If the aggregate in concrete passes through a sieve of 75 mm and is retained on 60 mm sieve, this aggregate will be flaky if its least dimension is less than |
|---|---|

A.40.5mm

B.50.5mm

C.60.5mm

D.70.5mm

| Answer: | A.40.5mm |
|---|---|

| 55 | The minimum possible value of group index for a soil is |
|---|---|
| | A. 0 |
| | B. 5 |
| | C. 10 |
| | D. 20 |
| Answer: | A. 0 |

| 56 | जर x > 10 आणि x < 20, तर खालीलपैकी सर्वात लहान अपूर्णांक कोणता आहे ? |
|---|---|
| | If x > 10 and x < 20, then which of the following fractions is the least? |
| | A. 0.5x/100 <br> A. 0.5x/100 |
| | B. 2x/230 <br> B. 2x/230 |
| | C. 0.5x/225 <br> C. 0.5x/225 |
| | D. x/150 <br> D. x/150 |
| Answer: | C. 0.5x/225 <br> C. 0.5x/225 |

| 57 | The bearing of a line measured in the direction of the progress of the survey is called |
|---|---|
| | A. Fore bearing |
| | B. Back bearing |
| | C. True bearing |
| | D. Grid bearing |

| Answer: | A.Fore bearing |
| --- | --- |

| 58 | एंड्रॉइड स्मार्टफोनमध्ये वापरलेला स्नॅपड्रॅगन प्रोसेसर कोणत्या कंपनीद्वारे तयार केला जातो?<br><br>Snapdragon processors used in Android smartphones are manufactured by which company ? |
| --- | --- |
|  | A.इंटेल<br><br>A.Intel |
|  | B.एप्पल<br><br>B.Apple |
|  | C.मायक्रोसॉफ्ट<br><br>C.Microsoft |
|  | D.क़्वौलकॉम<br><br>D.Qualcomm |
| Answer: | D.क़्वौलकॉम<br><br>D.Qualcomm |

| 59 | Which of the following statement is INCORRECT regarding assumptions made in the derivation of Bernoulli's equation? |
| --- | --- |
|  | A.    The flow is steady |
|  | B.    The flow is compressible |
|  | C.    The flow is irrotational |

| | D. | The fluid is ideal |
|---|---|---|

| Answer: | B. | The flow is compressible |
|---|---|---|

60 The principle which states that except in the region of the extreme ends of a bar carrying direct loading ,the stress distribution over the cross- section is uniform is.

A. Hooke's law

B. saint venant's principle

C. Pascal principle

D.Distortion energy theory

Answer: B. saint venant's principle

61 Maximum shear stress developed on the surface of a solid circular shaft under pure torsion is 320 Mpa. If the shaft diameter is doubled then the maximum shear stress developed corresponding to same torque will be

A. 120 Mpa

B.60 Mpa

C.40 Mpa

D. 20 Mpa

Answer: C.40 Mpa

62 On which one of the following factors , immediate settlement of footing depends ?

A.Shape

B.Size

C.Rigidity & location

D.All of the above

Answer:     D.All of the above

63     If the compacting efforts are increased while conducting compaction test, the which one of the following is correct ?

A.Maximum dry density increase

B.Maximum dry density decrease

C.Maximum dry density remain same

D.None of the above

Answer:     A.Maximum dry density increase

64     If the water flows through the runner along the direction parallel to the axis of rotation of the runner the turbine is called

A.inward radial flow turbine

B.outward radial flow turbine

C.axial flow turbine

D.none of the above

Answer:     C.axial flow turbine

65     The general principle of surveying is
       (1)  To work from part to whole
       (2) To locate a new station by at least two measurements (linear or angular) from fixed reference points

A.(1) only

B.(2) only

C.Both (1) & (2)

D.Neither (1) nor (2)

Answer: B.(2) only

---

66     खाली दिलेल्या पर्यायातून व्याकरणाच्या दृष्टीने चुकीचा असलेला पर्याय निवडा.

A.दुष्काळ वेगवेगळ्या स्वरूपांचा असतो. पाण्याचा, धान्याचा, सोयीसुविधांचा. कधी ओला, तर कधी सुका असू शकतो.

B.दुष्काळ वेगवेगळ्या स्वरूपांचा असतो. पाणी, धान्याचा, सोयीसुविधां. कधी ओलासर, तर कधी सुकि.

C.दुष्काळ वेगवेगळ्या स्वरूपांचा असू शकतो. कधी पाण्याचा तर कधी धान्याचा, कधी सोयीसुविधांचा तर कधी ओला किंवा सुका असू शकतो.

D.दुष्काळाचे स्वरूप वेगवेगळे असू शकते. उदाहरणार्थ, तो दुष्काळ कधी पाण्याचा तर कधी धान्याचा, कधी सोयीसुविधांचा तर कधी ओला किंवा सुका असू शकतो.

Answer: B.दुष्काळ वेगवेगळ्या स्वरूपांचा असतो. पाणी, धान्याचा, सोयीसुविधां. कधी ओलासर, तर कधी सुकि.

---

67     Which of the following relationship is CORRECT?

A.     Absolute pressure - Atmospheric Pressure – Vacuum Pressure = 0

B.     Absolute pressure - Atmospheric Pressure + Vacuum Pressure = 0

C.     Absolute pressure + Atmospheric Pressure – Vacuum Pressure = 0

D.     Absolute pressure + Atmospheric Pressure + Vacuum Pressure = 0

Answer:     B.     Absolute pressure - Atmospheric Pressure + Vacuum Pressure = 0

68    Which of the following method is better for forecasting of population of old cities?

A.The arithmetic increase method

B. The geometric increase method

C. The incremental increase method

D.  None of these

Answer:    A.The arithmetic increase method

69    If the froude number is equal to one it is called

A.sub critical flow

B.critical flow

C.super critical flow

D.none of the above

Answer:    B.critical flow

70    The ratio of slope and deflection of a cantilever with a point load at free end and length "L" is (Take $x = L$)

a) $\dfrac{7}{6L}$

b) $\dfrac{1.5}{L}$

c) $3L$

d) $2.5L$

a

| | |
|---|---|
| | b |
| | c |
| | d |
| Answer: | b |

71. Which one of the following is correct formula for calculating magnitude compression index of soil mass? Where, $C_c$ : compression index, $\Delta e$: change in void ratio, $\sigma$: stress volume

a) $$c_c = \left| \frac{\Delta e}{\log_{10}\left(\frac{\sigma_2}{\sigma_1}\right)} \right|$$

b) $$c_c = \left| \frac{\log_{10}\left(\frac{\sigma_2}{\sigma_1}\right)}{\Delta e} \right|$$

c) $$c_c = \frac{\Delta e}{\Delta \sigma}$$

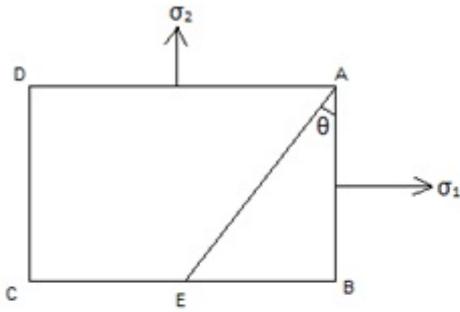d) $$c_c = \frac{\Delta \sigma}{\Delta e}$$

| | |
|---|---|
| | a |
| | b |
| | c |
| | d |
| Answer: | a |

| 72 | In the below figure the normal stress across section AE is (both given stress are like direct stress perpendicular to each other) |
|---|---|



a) $\sigma_1 \cos^2\theta + \sigma_2 \sin^2\theta$

b) $\sigma_1 \sin^2\theta + \sigma_2 \cos^2\theta$

c) $\sigma_1 + \sigma_2 \cos^2\theta$

d) $\sigma_1 \cos^2\theta + \sigma_2$

| | a |
|---|---|
| | b |
| | c |
| | d |

| Answer: | a |
|---|---|

| 73 | Loss of water by evaporation from the surface of concrete or by the absorption by aggregate or subgrade just after the placing of concrete into the form is the cause of |
|---|---|

| | A.Drying shrinkage |
|---|---|
| | B.Plastic shrinkage |
| | C.Autogenous shrinkage |
| | D.Early elastic shrinkage |

| Answer: | B.Plastic shrinkage |
|---|---|

74          Which one of the following percentile speed is considered as lower safe limit for vehicles?

            A.15th percentile speed

            B.85th percentile speed

            C.98th percentile speed

            D.None of the above

Answer:     A.15th percentile speed


75          Find the word that has been incorrectly spelt.

                A. flumoxx

                B. aggrandize

                C. juxtapose

                D. semantic

Answer:         A. flumoxx


76          The velocity distribution across the section of pipe for the flow of viscous fluid through
            circular pipe is

            A.linear

            B.hyperbolic

            C.constant

            D.parabolic

Answer:     D.parabolic

| 77 | In a steady flow of fluid |
| --- | --- |
| | A.total acceleration is zero |
| | B.convective acceleration is zero |
| | C.local acceleration is zero |
| | D.no acceleration is zero |
| Answer: | C.local acceleration is zero |

| 78 | दिलेल्या पर्यायातून सर्वात योग्य म्हण/वाक्प्रचार निवडून प्रश्नातील रिकाम्या जागा भरा.<br>मुजोर गिरणी मालक व भांडवलशाहीला शरण गेलेल्या सरकारची संप दडपून टाकण्याची भूमिका यामुळे १९८२च्या दीर्घ काळ चाललेल्या ऐतिहासिक संपामुळे कामगारांच्या संसाराचा अध:पात झाला आणि त्यांच्या कुटुंबांची _____. |
| --- | --- |
| | A.अन्नान दशा झाली |
| | B.भरभराट झाली |
| | C.तळपायाची आग मस्तकाला गेली |
| | D.नकार घंटा वाजली |
| Answer: | A.अन्नान दशा झाली |

| 79 | Which of the following quantity is determined by Imhoff cone? |
| --- | --- |
| | A.  Total solids |
| | B. Suspended solids |
| | C.   Settleable solids |

D. Soluble matter

Answer: C. Settleable solids

80 In counter fort retaining walls

A.the vertical slab is designed as a continuous slab but heel slab is cantilever slab

B.the heel slab is designed as a cantilever slab

C.the toe slab is designed as a cantilever slab

D.the Vertical slab is designed as a cantilever slab

Answer: C.the toe slab is designed as a cantilever slab

81 Carbonate hardness is equal to

A. Total hardness or alkalinity whichever is lesser

B. Total hardness or alkalinity whichever is greater

C. Non-carbonate hardness or alkalinity whichever is lesser

D. Non-carbonate hardness or alkalinity whichever is greater

Answer: A. Total hardness or alkalinity whichever is lesser

82 Which one of the following apparatus is used for the determination of liquid limit of soil ?

A.Casagrande apparatus

B.Hydrometer

C.Oedometer

D.Pyonometer

Answer: A.Casagrande apparatus

---

83 The moment of inertia of a rectangle with breadth b and length d about its base is _____ ( take base along b)

A.$(bd^3) / 3$

B.$(bd^3) / 12$

C.$(bd^3) / 36$

D.$(bd^3) / 24$

Answer: A.$(bd^3) / 3$

---

84 The summation of consistency index and liquidity index is always

A. Zero

B. Unity

C. Positive

D.Negative

Answer: B. Unity

---

85 By Orthotolidine test, which of the following is determined?
(i) Free residual chlorine
(ii) Combined residual chlorine

A. Statement (i) only

B.    Statement (ii) only

C.Statement (i) & (ii) both

D.Neither of (i) or (ii)

Answer:    C.Statement (i) & (ii) both

---

86    Which one of the following represents the dimension of kinematic viscosity?

A.$L^2 T^{-1}$

B.$LT^{-1}$

C.$L^{-2}T$

D.$L^{-1} T$

Answer:    A.$L^2 T^{-1}$

---

87    The C.G.S. unit of dynamic viscosity is
(i) pa. sec
(ii) (dyne-sec) / $cm^2$
(iii) Poise
(iv) stoke

A.(i) and (iv)

B.(ii) and (iii)

C.(iii) only

D.(i) only

Answer:    B.(ii) and (iii)

88    If at the inlet of the turbine, the energy available is only kinetic energy ,the turbine is known as

A.reaction turbine

B.impulse turbine

C. semi-reaction turbine

D.no such turbine are practical

Answer:    B.impulse turbine

89    शीतयुद्ध हे खालीलपैकी कोणत्या दोन देशांमधील तणावांमुळे झाले होते?

The Cold War was primarily due to tensions between which of the two following countries ?

A.युनायटेड स्टेट्स आणि सोव्हिएत युनियन
A.United States & Soviet Union

B.भारत आणि पाकिस्तान
B.India & Pakistan

C.जर्मनी आणि यू के
C.Germany & UK

D.जपान आणि चीन
D.Japan & China

Answer:    A.युनायटेड स्टेट्स आणि सोव्हिएत युनियन
A.United States & Soviet Union

90    For conducting light compaction proctor test as per Indian standard, what should be the weight of hammer (in kg )?

A.2.495

B.4.54

C.2.6

D.4.9

Answer:    C.2.6

91    The levelling done at the end of day's work to connect the finishing point with the starting point on that particular day is called

A. Longitudinal levelling

B. Cross-sectional levelling

C.  Differential levelling

D.Check levelling

Answer:    D.Check levelling

92    ब्रेक्सिटमुळे खालीलपैकी कोणता देश युरोपियन युनियनमधून बाहेर निघाला?

BREXIT marks the exit of which of the following countries from the European Union ?

A.फ्रान्स
A.France

B.इटली
B.Italy

C.यूके (इंग्लंड)
C.UK

D.क्रोएशिया
D.Croatia

| Answer: | C.यूके (इंग्लंड) |
|---|---|
| | C.UK |

---

93    Marine soils are transported & deposited by which one of the following agent?

    A.Wind

    B.Rivers

    C.Lakes

    D.Sea

| Answer: | D.Sea |
|---|---|

---

94    P, Q, R, S, आणि T ह्या पाच बहिणी आहेत. S आणि Q च्या वयाची बेरीज केली असता जो अंक प्राप्त होईल तेव्हडे P चे वय आहे. Q ही वयाने S पेक्षा जास्त आहे परंतु T पेक्षा लहान आहे. T ही P हून मोठी आहे पण R हून लहान आहे. R चे वय S आणि Q च्या वयाची बेरीज केली असता जो अंक प्राप्त होईल त्याच्या दुप्पट आहे आणि S ही 6 वर्षांची आहे.
जर Q ही 8 वर्षांची असेल तर खालीलपैकी कोणते वय T चे असू शकत नाही?

P, Q. R. S and T are five sisters. P's age is equal to the combined ages S and Q. Q is older than S but younger than T. T is older than P but younger than R. R's age is twice the combined ages of Q and S. S is 6 years old.
If Q is 8 years old then which of the following cannot be T's age?

    A.14 वर्षे
    A.14 years

    B.16 वर्षे
    B.16 years

    C.20 वर्षे
    C.20 years

    D.26 वर्षे
    D.26 years

| Answer: | A.14 वर्षे |
|---|---|
| | A.14 years |

| 95 | The value of kinetic energy correction factor for a fully developed laminar flow through circular pipe is |
|---|---|

A.1

B.2

C.3

D.4

Answer: B.2

---

| 96 | खाली उल्लेख केलेल्यापैकी सर्वात लहान आकाराचा ग्रह कोणता आहे? |
|---|---|
| | Which is the smallest planet among the 4 mentioned below ? |

A.शनि
A.Saturn

B.युरेनस
B.Uranus

C.मंगळ
C.Mars

D.पृथ्वी
D.Earth

Answer: C.मंगळ
C.Mars

---

| 97 | A main word is followed by a sentence highlighting its usage. From among the four options choose the one that is most nearly opposite in meaning to the main word.<br>Cupidity: The sight of money aroused his cupidity. |
|---|---|

A. Greed

B. Avidity

C. Prodigality

D.Yearning

Answer: C. Prodigality

98 Froude number is

A.Ratio of inertia force & gravity force

B.Ratio of fluid velocity & velocity of sound

C.Ratio of inertial force & viscous force

D.Ratio of inertial force & surface tension

Answer: A.Ratio of inertia force & gravity force

99 भारतातील पहिली यशस्वी भूमिगत अणुबॉम्ब चाचणी _____येथे केली होती.

India's first successful underground nuclear bomb test was at _____.

A.पोखरण, राजस्थान

A.Pokhran, Rajasthan

B.कच्छ, गुजरात

B.Kutch , Gujarat

C.बार्मेर, राजस्थान

C.Barmer, Rajasthan

D.हिसार, हरियाणा

D.Hisar, Haryana

Answer: A.पोखरण, राजस्थान

A.Pokhran, Rajasthan

100 While conducting heavy compaction test as per Indian standard , specimen is prepared in how many layers of soil mass ?

A.3

B.5

C.2

D.6

Answer: B.5