Maharashtra PWD JE

Previous Year Paper

Paper-I 23 June, 2018

Question Paper Title : PWD-Paper-1

Date of Exam : 23-06-2018 09:00 AM

1		The manhole in which a vertical pipe is used is called
	A.	Deep manhole
	B.	Drop manhole
	C.	Ramp
	D.	Lamp hole
Answer:	B.	Drop manhole

2 The section modulus for a circular section of diameter D is given by

a) $\frac{\pi}{6}D^4$

b) $\frac{\pi}{32}D^4$

c) $\frac{\pi}{32}D^3$

d) $\frac{\pi}{64}D^4$

	a
	b
	c
	d
Answer:	c

3	Aeolian soils are transported & deposited by which one of the following agent?
	A.Wind
	B.Rivers
	C.Lakes
	D.Sea
Answer:	A.Wind

4	There are four words in a set. Select the odd one out. –
	A. switch
	B. swap
	C. transform
	D. altar
Answer:	D. altar

5	Which one of the following test is conducted to evaluate the durability property of aggregate ?
	A.Water absorption test
	B.Impact test
	C.Soundness test
	D.Abrasion test
Answer:	C.Soundness test

6	For which one of the following purpose, moving car observer method is adopted?
	A.To determine traffic flow
	B.To determine traffic capacity
	C.For origin & destination studies
	D.None of the above
Answer:	A.To determine traffic flow

7	खालीलपैकी सर्वात मोठा पर्याय कोणता आहे ? Which of the following options is the largest?
	A.25 च्या 10% - 200 च्या 25% - 300 च्या 30% A.10% of 25 - 25% of 200 - 30% of 300
	B.25 च्या 30% + 200 च्या 25% + 300 च्या 5% B.30% of 25 + 25% of 200 + 5% of 300
	C.200 च्या 10% + 150 च्या 15% + 250 च्या 30% C.10% of 200 + 15% of 150 + 30% of 250
	D.100 च्या 20% + 150 च्या 25% + 250 च्या 5% D.20% of 100 + 25% of 150 + 5% of 250
Answer:	C.200 च्या 10% + 150 च्या 15% + 250 च्या 30% C.10% of 200 + 15% of 150 + 30% of 250

8	Which one of the following device is used to measure discharge in a pipe?
	A.Pitot tube
	B.Manometer
	C.Ventuirmeter
	D.Anemometer

Answer:	C.Ventuirmeter

9	Silt control devices which extract the silt from the canal-water after the silted water has travelled a certain distance in the off-take canal is called _
	A. Silt excluders
	B. Silt ejectors
	C. Silt extractors
	D. Both Silt ejectors and extractors
Answer:	D. Both Silt ejectors and extractors

10	Which one of the following substance is blended with bitumen for production of slow curing cutback bitumen?
	A.Petrol
	B.Diesel
	C.High boiling point gases
	D.None of the above
Answer:	C.High boiling point gases

11	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.15 + 15 + 10 – 15 + 10 – 15 + 2 + 4 + 8 – 10
B.15 + 15 + 10 – 15 + 10 – 15 + 2 + 4 + 8 – 10

C.5 + 5 – 10 – 15 + 10 + 5 + 2 – 10 + 8 + 10
C.5 + 5 – 10 – 15 + 10 + 5 + 2 – 10 + 8 + 10

D.15 + 5 + 10 – 15 + 10 + 5 – 7 – 4 + 8 – 10
D.15 + 5 + 10 – 15 + 10 + 5 – 7 – 4 + 8 – 10

Answer: A.5 + 15 + 10 – 15 + 10 + 5 + 2 + 4 – 8 + 10
A.5 + 15 + 10 – 15 + 10 + 5 + 2 + 4 – 8 + 10

12 For the calculation of stopping sight distance, the reaction time of driver may be taken as ?

A.2.5 second

B.5 second

C.7.5 second

D.10 second

Answer: A.2.5 second

13 Which one of the following percentile speed is considered as upper safe unit for vehicles?

A.15th percentile speed

B.85th percentile speed

C.98th percentile speed

D.None of the above

Answer: B.85th percentile speed

14 Maximum principal stress theory gives satisfactory results for

A.Ductile material

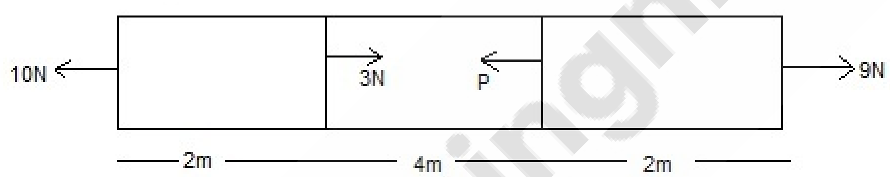
B. Brittle materials

C. Both Ductile material and Brittle materials

D.None of Ductile material and Brittle materials

Answer: B. Brittle materials

15 What is value of P in newton?



10 N

2 N

6 N

4 N

Answer: 2 N

16 Which of the following sureveying is conducted in order to determine the boundaries of fields, estates, houses?

A.Topographical surveying

B. Cadastral surveying

C.City surveying

D.Engineering surveying

Answer:	B. Cadastral surveying

17	Reciprocal of mass density which is commonly applied to gases is known as _
	A. Specific volume
	B. Specific gravity
	C. Specific weight
	D. Weight density

Answer:	A. Specific volume

18	खालीलपैकी कोणाला "भारतीय नाइटिंगेल" म्हटले जाते? Who among the following is called as “The Nightingale of India” ?
	A.मीरा बाई A.Mira Bai
	B.सरोजिनी नायडू B.Sarojini Naidu
	C.डॉ. ऍनी बेझंट C.Dr Annie Beasant
	D.वंदना शिवा D.Vandana Shiva

Answer:	B.सरोजिनी नायडू B.Sarojini Naidu

19	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 पिवळा 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 yellow rose?
	A.9 A.9
	B.8 B.8
	C.10 C.10
	D.5 D.5
Answer:	A.9 A.9

20	For compaction of which of the following sheep – foot rollers are recommended?
	A.Granular soils
	B.Hard boulders
	C.Cohesive soil
	D.Any type of soil
Answer:	C.Cohesive soil

21	2017 मध्ये कोणत्या देशाचा सर्वात जास्त वित्तीय खर्च लष्करावर झाला होता? Which country had the highest amount of financial spending interms of military expenditure in 2017?
	A.चीन A.China
	B.अमेरिका B.USA
	C.रशिया C.Russia
	D.सौदी अरेबिया D.Saudi Arabia
Answer:	B.अमेरिका B.USA

22	If the water flows radially from inwards to outwards the turbine is known as
	A.inward radial flow turbine
	B.outward radial flow turbine
	C.axial flow turbine
	D.none of the above
Answer:	B.outward radial flow turbine

23	If velocity potential exists, the flow should be
	A.Steady
	B. Unsteady

	C. Rotational
	D. Irrotational
Answer:	C. Rotational

24	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 प्रत्येकाच्या वाटयाला दोन प्रकारची नाणी आली आणि A कडे रु.1.60 एवढी रक्कम जमा 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 each of them have two types of coins and A has Rs.1.60, then:
	A.सर्वात जास्त रक्कम असलेल्या व्यक्तीकडे रु.4 एवढी रक्कम जमा असेल A.the person who has the highest amount has Rs.4
	B.सर्वात जास्त रक्कम असलेल्या व्यक्तीकडे रु.3.50 एवढी रक्कम जमा असेल B.the person with the highest amount has Rs.3.50
	C.दोन व्यक्तींकडे रु.3 पेक्षा जास्त रक्कम जमा असेल C.two people have more than Rs.3
	D.वरीलपैकी कोणतेही नाही D.none of the above
Answer:	D.वरीलपैकी कोणतेही नाही D.none of the above

25	The process of applying chlorine to the water before filtration or rather before sedimentation coagulation is called as
	A. Plain chlorination
	B. Pre-chlorination
	C. Post-chlorination
	D. Super- chlorination

Answer:	B. Pre-chlorination

26	Which one of the following is correct relationship between void ratio (e) & porosity (η)? a) $\eta = \frac{e}{1+e}$ b) $\eta = \frac{e}{1-e}$ c) $\eta = \frac{1+e}{e}$ d) $\eta = \frac{1-e}{e}$
	a
	b
	c
	d
Answer:	a

27	For conducting light 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:	C.310

28	The shear stress required to produce unit rate of shear strain is

	A.Turbulence
	B.Specific gravity
	C.Density
	D.Viscosity
Answer:	D.Viscosity

29	If there is a pressure of black cotton soil upto 3m depth followed by medium dense sand , 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:	B.Under reamed piles

30	The intake site should
	A.remain inaccessible during floods
	B.not get flooded
	C.both remain inaccessible during floods and not get flooded
	D.be far away from treatment plant.
Answer:	B.not get flooded

31	The ratio of plastic moment to yield moment, in theory of plastic bending of beams is K/W as _
	A.Shape factor
	B.Section modulus
	C.Radius of gyration
	D.None of the above
Answer:	A.Shape factor

32	Which one of the following is the correct formula for calculation of porosity Vv : volume of voids vs : volume occupied solids V: total volume
	A.Vv / V
	B.Vs / V
	C.Vv / Vs
	D.V / Vv
Answer:	A.Vv / V

33	The flow velocity at which the plain sedimentation tank is designed to operate is called
	A. Overflow rate
	B. Surface overflow rate
	C. Surface loading

	D. All of these

Answer:	D. All of these

34	From the pairs of words given, choose the one that fills the blanks most appropriately. While many reform initiatives seek to _______ the UN role in global social and economic policy, other initiatives have set out to _______ UN influence in this area.
	A. reinforce, consolidate
	B. curtail, validate
	C. increase, back
	D. strengthen, restrict

Answer:	D. strengthen, restrict

35	Which one of the following test is conducted for saturated cohesive soil ?
	A.Consolidation drained (CD) test
	B.Consolidation undrained (CU) test
	C.Unconfined compression (UC) test
	D.Unconsolidated undrained (UU) test

Answer:	D.Unconsolidated undrained (UU) test

36	Which one of the following piles are used for retaining of soil filling?
	A.Point bearing piles
	B.Sheet piles
	C.Compaction piles

	D.Batter piles
Answer:	B.Sheet piles

37	The property / process of loss of strength due to remoulding is known as :
	A. Boiling
	B.Liquefaction
	C.Thixotropy
	D.Sensitivity
Answer:	D.Sensitivity

38	Find the word that has been incorrectly spelt.
	A. jackdaw
	B. felony
	C. bravado
	D. torential
Answer:	D. torential

39	If two forces acting at a joint are not acting along the same straight line, then for equilibrium of the joint,
	A. Both forces must be zero
	B. Forces must be equal but opposite in sign
	C.One of the forces must be zero

D. None of these

Answer: A. Both forces must be zero

40 The correct relation is (where P is pressure)

A. $P_{absolute} = P_{atm} + P_{gauge}$

B. $P_{atm} = P_{absolute} + P_{gauge}$

C. $P_{gauge} = P_{absolute} + P_{atm}$

D. $P_{vaccum} = P_{absolute} + P_{atm}$

Answer: A. $P_{absolute} = P_{atm} + P_{gauge}$

41 With reference to the datum-line, Hydraulic Grade Line gives

A. Kinetic head + pressure head

B. Pressure head + datum head

C. Kinetic head + datum head

D. Kinetic head + pressure head + datum head

Answer: B. Pressure head + datum head

42 खाली दिलेल्या पर्यायातून प्रश्नातील शब्दासाठी विरुद्धार्थी शब्द निवडा.
पुरोगामी

A.परकीय

B.पुर्ववत

	C.पुनरुज्जीवि	
	D.प्रतिगामी	
Answer:	D.प्रतिगामी	

43	The curves with the help of which the exact behavior and performance of a hydraulic turbine under different working conditions can be known are called
	A. Characteristic curves
	B. Non-Characteristic curves
	C.Oscillatory curves
	D. None of the above
Answer:	A. Characteristic curves

44	The smallest value of water content at complete saturation of the soil mass is
	A. Liquid limit
	B. Plastic limit
	C. Shrinkage limit
	D. None of these
Answer:	C. Shrinkage limit

45	दिलेल्या पर्यायातून सर्वात योग्य म्हण/वाक्प्रचार निवडून प्रश्नातील रिकाम्या जागा भरा. ज्याच्याकडे पैसे आहेत त्याने ते कसेही उडवावेत, ज्याला परवडत नाही त्याने _____ जाऊन मान मोडून घेऊ नये.

	A.उंटाच्या शेपटाचा मुका घ्यायला
	B.शेळी हाकायला
	C.बुजगावण्याकडे पहायला
	D.उंटाच्या पाठीवर बसून शेळ्या हाकायला

Answer:	A.उंटाच्या शेपटाचा मुका घ्यायला

46	Which one of the following earth pressure acts behind a bridge abutment ?
	A.Active earth pressure
	B.Passive earth pressure
	C.Earth pressure at rest
	D.None of the above

Answer:	C.Earth pressure at rest

47	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 शिक्षक आहे? 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. Who is the lecturer?
	A.A A.A

	B.B B.B
	C.C C.C
	D.D D.D
Answer:	C.C C.C

48	The relation between young's modulus $\in$ and Bulk modulus k is (μ is poissons ratio) a) $3\in = k(1 - \mu)$ b) $\in = 4k(1 - 2\mu)$ c) $\in = 3k(1 - 2\mu)$ d) $\in = 2k(2 - \mu)$
	a
	b
	c
	d
Answer:	c

49	As per IRC recommendation, what should be the value of camber for concrete / bituminous surface in case of light rainfall?
	A.2 Percentage
	B.1.7 Percentage
	C.3 Percentage

	D.2.5 Percentage

Answer:	B.1.7 Percentage

50	Which of the following relationship is CORRECT?
	A. Absolute pressure - Atmospheric Pressure – Gauge Pressure = 0
	B. Absolute pressure - Atmospheric Pressure + Gauge Pressure = 0
	C. Absolute pressure + Atmospheric Pressure – Gauge Pressure = 0
	D. Absolute pressure + Atmospheric Pressure + Gauge Pressure = 0

Answer:	A. Absolute pressure - Atmospheric Pressure – Gauge Pressure = 0

51	A differential manometer is connected to a pipe carrying water. The manometer contains mercury .The difference in the level of mercury in manometer is 20 cm. what is difference of pressure head . Take specific gravity of mercury = 13. 6
	A.252 cm of water
	B. 20 cm of water
	C.zero
	D. 30 cm of water

Answer:	A.252 cm of water

52	Consider the following statements regarding zero air void line : X: In case of pure sandy soils, the effect of water content on the dry density is well defined when the water content is below the optimum value. Y: The line of optimums is roughly perpendicular to zero air void line. Which of the above statement/s is/are CORRECT?
	A. X only
	B. Y only
	C. Both X & Y
	D. Neither X nor Y
Answer:	D. Neither X nor Y

53	Which of the following device works on the principle that “If the velocity of flow at a point becomes zero, the pressure there is increased due to the conversion of the kinetic energy into pressure energy”?
	A. Venturimeter
	B. Orifice meter
	C. Pitot-tube
	D. Both Venturimeter and Orifice meter
Answer:	C. Pitot-tube

54	The specific weight of 1 litre of a liquid which weighs 8 N is.
	A. 8000 N/M^3
	B.8000 N-M
	C.1600 N/M^3
	D.Zero

Answer:	A. 8000 N/M^3

55	As per Buston’s formula, for a city of population of 100000, fire demand will be
	A. 31820 litres/minute undefined
	B. 11360 litres/minute undefined
	C. 46370 litres/minute undefined
	D. 56630 litres/minute undefined

Answer:	D. 56630 litres/minute undefined

56	The value of shear stress on principal plane is
	A.Zero
	B.Maximum
	C.Minimum but positive
	D.Average value

Answer:	A.Zero	

57	Which one of the following is the most important factor in the design of summit curves on highways ?
	A.Sight distance requirement
	B.Passenger's comfort
	C.Impact factor
	D.Aesthetic appearance
Answer:	A.Sight distance requirement

58	For a specimen obeying Hooke's law, when the stress is increased to 4 times, then the modulus of elasticity
	A.also increases 4 times
	B.remains same
	C.decreases to one-fourth
	D.increases 2 times
Answer:	B.remains same

59	Weber 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:	D.Ratio of inertial force & surface tension

60	२०० ह्या अंकाच्या ५% च्या २०% किती होतात ? What is 5% of 20% of 200? _
	A.८०० च्या १०% च्या ५% A.10% of 5% of 800
	B.८०० च्या १०% च्या १०% B.10% of 10% of 800
	C.८०० च्या ५% च्या ५% C.5% of 5% of 800
	D.४०० च्या १०% च्या ४०% D.10% of 40% of 400

Answer:	C.८०० च्या ५% च्या ५% C.5% of 5% of 800

61 Which one of the following is correct formula for calculation of saturated unit weight of soil mass? Where G= Specific gravity of solids, e= void ratio, γ_w= Unit weights water

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

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

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

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

a

b

	c
	d

Answer:	b

62	In which one of the following conditions, configuration of flow nets depends?
	A.Permeability of soil
	B.Head difference
	C.Boundary condition
	D.Seepage quantity

Answer:	C.Boundary condition

63	When two shafts are connected in series then total angle of twist equals.
	A.Sum of angle of twist of two shafts.
	B. Difference of angle of twist of the two shaft
	C.Product of angle of twist of the two shaft.
	D. None of these

Answer:	A.Sum of angle of twist of two shafts.

64	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 वर्षाची आहे. जर P ही 14 वर्षांची असेल, तर R चे वय काय आहे? 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 P is 14 years old, what is R's age?
	A.14 वर्षे A.14 years
	B.7 वर्षे B.7 years
	C.28 वर्षे C.28 years
	D.24 वर्षे D.24 years
Answer:	C.28 वर्षे C.28 years

65	The ability of material to resist indentation or surface abrasion is called.
	A. Ductility
	B. Resilience
	C. Hardness
	D. Malleability
Answer:	C. Hardness

66	During CBR value determination, load sustained by standard aggregate at 5mm penetration is taken as:

	A.1370kg
	B.2000kg
	C.2055kg
	D.3000kg
Answer:	C.2055kg

67	If a constant bending moment is acting on a beam along its length, then the shear force will
	A.be maximum at the centre and zero at the ends
	B.be zero at the centre and maximum at the ends
	C.be zero at all sections along the beam
	D.also have a constant value everywhere along its length
Answer:	C.be zero at all sections along the beam

68	एक मुलगा आणि एक मुलगी एकाबाकावर बसले आहेत. काळा केस असलेली व्यक्ती म्हणते, "मी मुलगा आहे." लाल केस असलेली व्यक्ती म्हणते "मी एक मुलगी आहे". जर त्या दोघांपैकी किमान एक व्यक्ती खोटे बोलत असेल तर त्या दोघांपैकी मुलगी कोण आहे? A boy and a girl are sitting on a bench. “I am a boy” says the child with black hair. “I am a girl” says the child with red hair. If at least one of them is lying, which child is the girl?
	A.काळा केस असलेली व्यक्ती A.The child with black hair
	B.लाल केस असलेली व्यक्ती B.The child with red hair
	C.सत्य बोलणारा व्यक्ती C.The child who speaks the truth
	D.सांगू शकत नाही D.Can't say

Answer:	A.काळा केस असलेली व्यक्ती A.The child with black hair

69	The last staff reading in any set up of the instrument is called
	A.Foresight
	B. Backsight
	C. Intermediate sight
	D.None of these
Answer:	A.Foresight

70	Which one of the following test is conducted for determination of in shear strength of soft clay ?
	A.Plate load test
	B.Standard penetrate test
	C.Vane shear test
	D.Dilatancy test
Answer:	C.Vane shear test

71	उर्जित पटेल यांच्यापूर्वी आर बी आय चे गव्हर्नर कोण होते? Who was the RBI Governor prior to Urjit Patel ?
	A.रघुराम राजन A.Raghuram Rajan
	B.बिमल जालान B.Bimal Jalan

	C.अमिताव घोष C.Amitav Ghosh
	D.के. आर. पुरी D.K R Puri
Answer:	A.रघुराम राजन A.Raghuram Rajan

72	The cross-section area of a rivet resists ___ _
	A.Shear stress
	B.Tensile stress
	C.Compressive stress
	D.Both tensile and compressive stress
Answer:	A.Shear stress

73	Which one of the following is correct formula for calculating liquidity index of a clayey soil ? LL = liquid limit PL = plastic limit W = natural moisture content
	A.(LL - W) / (LL - PL)
	B.(W - PL) / (LL - PL)
	C.(LL + W) / (LL + PL)
	D.(W+PL) / (LL + PL)
Answer:	B.(W - PL) / (LL - PL)

74	Vibratory roller are recommended for compaction of which type of soils?
	A.Cohesionless soils
	B.Cohesive soil
	C.Both cohesionless & cohesive soil
	D.Neither cohesionless soil nor cohesive soil
Answer:	A.Cohesionless soils

75	To obtain the correct volume using Trapezoidal rule, the Prismoidal correction should always be
	A. Added
	B.Subtracted
	C.Multiplied
	D.Divided by a constant
Answer:	B.Subtracted

76	Choose the part which has an error.
	A.All these four models
	B.incorporate a built-in voltage stabiliser
	C.and offers very low
	D.cost per copy to users.
Answer:	C.and offers very low

77	खाली दिलेल्या पर्यायातून प्रश्नातील शब्दासाठी समानार्थी शब्द निवडा. विलोभनीय
	A.विचित्र
	B.अचंबित
	C.मनमोहक
	D.विचलित
Answer:	C.मनमोहक

78	The elastic critical stress in compression depends on the following: (i) Effective length of compression member (ii) Section area of compression member (iii) Modulus of elasticity of steel The correct answer is
	A.Only i, ii
	B.i, ii, iii
	C.Only ii, iii
	D.Only i
Answer:	B.i, ii, iii

79	If the froude number is less than one then the flow is called
	A.sub critical flow
	B.critical flow

	C.super critical flow
	D.none of the above
Answer:	A.sub critical flow

80	Which one of the following test is conducted on bitumen to determine the safety towards handling of hot bitumen?
	A.Ductility test
	B.Penetration test
	C.Flash & fire point test
	D.Softening point test
Answer:	A.Ductility test

81	1 MPa =
	A. 1 N/m^2
	B. 1 kg/cm^2
	C.1 kg/m^2
	D. 1N/mm^2
Answer:	D. 1N/mm^2

82	The distance from the boundary of the solid body measured in y – direction to the point where the velocity of fluid is approximately equals to 0.99 times the free stream velocity of fluid is
	A.boundary layer thickness

	B. displacement thickness
	C.momentum thickness
	D.energy thickness

Answer:	A.boundary layer thickness

83	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. Jaded: The uphill climb had all the new trekkers jaded.
	A. Vivify
	B. Pall
	C. Enfeeble
	D.Tedious

Answer:	A. Vivify

84	गुड्स व सेवा कराच्या अंतर्गत ई-वे (इलेक्ट्रॉनिक वे) विधेयक कधी लागू झाले? When was the E-Way (Electronic Way) Bill under the Goods and Services Tax rolled out ? –
	A.1 एप्रिल 2018 A.1st April 2018
	B.1 एप्रिल 2017 B.1st April 2017
	C.1 मे 2018 C.1st May 2018
	D.1 मे 2017 D.1st May 2017

Answer:	A.1 एप्रिल 2018 A.1st April 2018	

85	खालीलपैकी सर्वात मोठा अपूर्णांक कोणता आहे ? Which of the following fractions is the largest?
	A.20/21 A.20/21
	B.15/21 B.15/21
	C.20/25 C.20/25
	D.16/17 D.16/17
Answer:	A.20/21 A.20/21

86	माऊंट एव्हरेस्ट चढणारी पहिली भारतीय महिला कोण? Who was the first Indian Lady to climb Mt. Everest ?
	A.अरुणिमा सिन्हा A.Arunima Sinha
	B.संतोष यादव B.Santosh Yadhav
	C.बचेन्द्री पाल C.Bachendri Pal
	D.प्रेमलता अगरवाल D.Premlata Agarwal
Answer:	C.बचेन्द्री पाल C.Bachendri Pal

87	The reduction coefficient of a reinforced concrete column with an effective length of 5 m and size 250×300 mm is
	A.0.5833
	B.0.625
	C.0.8333
	D.0.729
Answer:	C.0.8333

88	खाली दिलेल्या पर्यायातून व्याकरणाच्या दृष्टीने योग्य असलेला पर्याय निवडा.
	A.भारतीय सैन्याने तेव्हा झोझीला खिंडीत एम-५ स्टुअर्ट रणगाडे नेऊन केलेला जागतिक विक्रम आजही अबाधित आहे. इतक्या उंचीवर रणगाडे आलेले पाहूनच शत्रूची अवसान गळते आणि झोझीला, कारगिल अणि लेह भारताच्या ताब्यात राहिले.
	B.झेलम नदी खोऱ्यातिल किशनगंगा नदी पुढे पाक प्राप्त काश्मीरमध्ये वाहते. पाकिस्तानात त्याला नीलम नदी म्हणतात.
	C.युद्धात भूभागावरील नियंत्रणाचे एक तत्त्व आहे – 'लँड युज आणि लँड डिनायल'. एखाद्या भूभागची आपण वापर करणे पण शत्रूला तो नाकारणे.
	D.श्रीनगर ते लेह मार्गावर समुद्रसपाटीपासून ११,५७८ फूट उंचीवरील हा खींड काश्मीर खोऱ्याला लडाख प्रांताच्या आत जोडतो.
Answer:	C.युद्धात भूभागावरील नियंत्रणाचे एक तत्त्व आहे – 'लँड युज आणि लँड डिनायल'. एखाद्या भूभागची आपण वापर करणे पण शत्रूला तो नाकारणे.

89	If unconfined compressive strength of clayey soil in natural state is 5kg/cm2& in the remoulded state is 1 kg/cm2 .what will be the value sensitivity of given soil ?
	A.2
	B.3
	C.4
	D.5
Answer:	D.5

90	According to IS 456:2000 lap splices shall not be used for bar larger than
	A.25 mm dia
	B.32 mm dia
	C.36 mm dia
	D.No such restriction in lap splicing
Answer:	C.36 mm dia

91	Relation between effective length of weld and actual length of weld as per IS 800 : 2007 is
	A.Actual Length = Effective Length + 2 x weld size
	B.Actual Length = Effective Length – 2 x weld size
	C.Actual Length = Effective Length + 2 x throat thickness
	D.Actual Length = Effective Length – 2 x throat thickness
Answer:	A.Actual Length = Effective Length + 2 x weld size

92	While conducting light 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:	A.3

93	Acceptable noise level (indoor) as per IS 4954: 1968 in Hospitals, class rooms is
	A. 25-30 dB(A)
	B. 30-35 dB(A)
	C. 35-40 dB(A)
	D. 45-50 dB(A)
Answer:	C. 35-40 dB(A)

94	Azimuth is also known as
	A.True bearing
	B.Magnetic bearing
	C.Arbitrary bearing
	D.Grid meridian
Answer:	A.True bearing

95	As per Francis formula, for a rectangular weir having two end contractions, the effective length will be equals to ____ where, notations have their usual meaning
	A.(L - 0.05 H)
	B.(L - 0.1 H)
	C.(L - 0.2 H)
	D.(L - 0.4 H)
Answer:	C.(L - 0.2 H)

96	खाली दिलेल्या पर्यायातून व्याकरणाच्या दृष्टीने चुकीचा असलेला पर्याय निवडा. _
	A.भांडवली बाजारात नोंदल्या गेलेल्या कंपन्यांत अनेक घोटाळे घडल्याने त्याची पुनरावृत्ती रोखण्याच्या दृष्टीने सेबीचा ताजा अहवाल महत्त्वाचा ठरतो. undefined
	B.भांडवली बाजाराची नियंत्रक असलेल्या सेबी या यंत्रणेने उद्योग संचालनातील पारदर्शीपणा वाढावा यासाठी उचललेले पाऊल महत्त्वाचे आणि लक्षणीय आहे. undefined
	C.संपत्तिसंचय ही अनेकांची प्रेरणा असू शकते आणि त्यासाठी प्रयत्न करताना सर्वांना समान संधी उपलब्ध करून देणे ही संबंधित शासनाची जबाबदारी असते. undefined
	D.अलीकडेच एक बडय़ा उद्योगिसमूहाने एकच क्रमांकचे अनेक समान भाग विकल्याचे प्रकरण उघडकीस येऊनदेखील काहीही घोडले नाही. undefined

Answer: D.अलीकडेच एक बडय़ा उद्योगिसमूहाने एकच क्रमांकचे अनेक समान भाग विकल्याचे प्रकरण उघडकीस येऊनदेखील काहीही घोडले नाही.

undefined

97 जर x > 10 आणि x < 20, तर खालीलपैकी सर्वात मोठा अपूर्णांक कोणता आहे ?

If x > 10 and x < 20, then which of the following fractions is the largest?

A.x/180
A.x/180

B.2x/180
B.2x/180

C.0.5x/175
C.0.5x/175

D.x/100
D.x/100

Answer: B.2x/180
B.2x/180

98 Consider a liquid droplet (spherical) of diameter d, and p is pressure intensity inside droplet (in excess of outside pressure). The surface tension is given by

A.pd / 4

B.pd / 8

C.pd / 2

D.pd / 16

Answer: A.pd / 4

99	Falling 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:	A.Fine grained soil

100	Which one of the following is correct with respect to well graded sand? c_u: coefficient of uniformity c_c: coefficient of curvature a) $C_u > 6$ $1 < C_c < 3$ b) $C_u < 6$ $C_c > 3$ c) $C_u > 6$ $C_c < 1$ d) $C_u < 6$ $1 < C_c < 3$
	a
	b
	c
	d
Answer:	a