Print

Uttar Pradesh Power Corporation Limited

Subject : Civil Engineering

Q.1 India is helping which country to conduct elections ?

1) Java
2) Sri Lanka
3) Maldives ✓
4) Seychelles

Q.2 Who was the Prime Minister of Britain when the League of Nations was formed?

1) Henry Cecil
2) Winston Churchil
3) Lloyd George ✓
4) Lord Curzon

Q.3 Which one measure helped to bring down the cyclone affected deaths from 10,000 in 1999 to about 20 in 2013 on the Odisha coast?

1) Building cyclone Shelters ✓
2) Advanced Meteorological warning.
3) Radar and warnings to fishermen
4) Free supply of food to the villages.

Q.4 Temperature in human body is controlled by

1) Thyroid gland
2) Adrenal gland
3) Hypothalamus gland ✓
4) Pituitary gland

Q.5 What was the name given to the **World war I** by historians?

1) First War.
2) European war
3) The Great war ✓
4) Seven year War

Q.6 What is the Distance between the distance of a galaxy and rate at which it is receding from us called ?

✗ 1) Flash Point
✓ 2) Hubble constant
✗ 3) Space time.
✗ 4) Lorentz Curve

Q.7 Why is the Commonwealth Heads of State Meeting (CHOGM) in Srilanka in November historic?

✗ 1) This is the first meeting of the CHOGM since the World War II.
✗ 2) Srilanka is the country which heads the CHOGM
✗ 3) It has as it main agenda the development of Sri Lanka
✓ 4) It is the second largest summit of world leaders to gather in .

Q.8 In which field of Physics has the Nobel Prize been given in 2013?

✓ 1) Universe
✗ 2) Thermodynamics.
✗ 3) Optics
✗ 4) Energy

Q.9 Which country did the President of India Shri Pranab Mulherjee first visited after he took over office?

✗ 1) Nepal
✗ 2) Bhutan
✗ 3) Myanmar
✓ 4) Bangladesh

Q.10 1996–7 and 2002–3, the area under canal irrigation declined by 2.4 million ha (13.8 per cent), the area under tank irrigation fell by 1.4 million ha (42.4 per cent), and the area irrigated by all other sources declined by 1 million ha (28 per cent). The only irrigation source that increased its share was groundwater wells, by 2.8 million ha (more than 9 per cent) Why has such a change in irrigation demands happened ?

1.Not enough supply of water from canals
2.More tubewell irrigation by farmers in the source areas of rivers
3.High cost of irrigation water, and diversion for non farm use
4.Joint use of water not possible due to social and economic inequalities

✓ 1) 1 and 4
✗ 2) 2 and 4

3) 1and 2
4) 3and 4

Q.11 Which feature was formed by the crashing of a meteorite near Buldhana ?

1) Pimpri Lake
2) Thane Lake
3) Chilika Lake
4) Lonar Lake

Q.12 What is the mission of the Chandra space Telescope and Observatory launched in 1999?

1) It spends 85% of its orbit above the belts of charged particles that surround the Earth.
2) Forecast the changes in the Moon and send data to Earth.
3) Observe the high energy activity in space like the formation of stars .
4) Study the earth and moon movements and calculate the changes in their distances

Q.13 What is the main mission of the TARA expedition?

1) Control the resources of the Arctic sea.
2) Collect information on the Arctic Sea
3) Study Ocean flora and its behavior
4) Find reasons why the Arctic ice is melting

Q.14 Which city will host the summer olympics in year 2020 ?

1) New Delhi
2) Berlin
3) Barcelona
4) Tokyo

Q.15 What is the biggest drawback for Walmart investing in India ?

1) Legal ownership will remain with the Indian counterpart.
2) No profits can be taken without paying tax
3) Goods have to include rural products
4) 30 % goods have to be sourced locally

Q.16 In which country are the issues related to human rights blocking the organisation of World Cup Foot ball of 2022 ?

1) Saudi Arabia

2) Qatar
3) Dubai
4) Turkey

Q.17 Which International Agency built and launched The Space laboratory ?

1) European space agency
2) China space administration
3) Russian Federal space agency
4) NASA

Q.18 Which super sports star raised funds for the Kedarnath land slide tragedy ?

1) Alistair Cook
2) Brian Lara
3) Beckham
4) Sachin Tendulkar

Q.19 What is the UID?

1) Useful Identity
2) Unique Identity
3) Utility identity.
4) Universal identity

Q.20 In which city of USA is a full marathon going to take place in November2013 supported by the TCS?

1) Chicago
2) Washington.
3) New York
4) Minneapolis

Q.1 In the following question, equation would become correct if two signs are interchanged. Find the alternative containing signs to be interchanged to make the equation correct.

8 + 6 ÷ 3 - 8 x 4 = 24

1) - and x
2) + and ÷
3) + and -
4) ÷ and x

Q.2

Four statements are followed by four conclusions numbered I, II, III and IV. Assuming the statements to be true, even if they are at variance with commonly known facts, decide which of the conclusions logically follow?

Statements: (1) All books are notes; (2) Some papers are pens; (3) No note is a paper;
(4) All pens are pencils.

Conclusions: I. Some papers are books.
II. Some notes are books.
III. Some pens are notes.
IV. Some pencils are papers.

1) Only conclusion II follows
2) Only conclusions I, II and IV follow
3) Only conclusions II, III and IV follow
4) Only conclusions II and IV follow

Q.3

Suresh's house faces West. He walks 20 meters straight from the backside of his house and turns left and walks 10 meters. Then he turns right and walks 15 meters. Finally, he turns right and walks 45 meters. In which direction, is he now from his house?

1) North-West
2) North-East
3) South
4) South-East

Q.4

The first two letter clusters on the left of the sign '::' are related in a certain way. The same relationship holds for the second pair on the right of the sign '::' of which one is missing. Choose the missing one from among the alternatives.

DJHF : WQSU :: ? : TKNQ

1) GPMJ
2) HQNK
3) DMJG
4) GMKI

Q.5

One of the numbers in the following number series is wrong. Which is the wrong number?

1, 2, 10, 37, 102, 226, 442

1) 102
2) 37

✗ 3) 10
✗ 4) 226

Q.6

Which of the following groups of letters is the odd one out?

✗ 1) ZYCT
✗ 2) LRDK
✗ 3) CFMP
✓ 4) OAEU

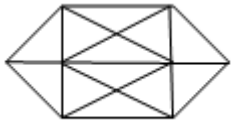
Q.7

A boatman can row to a place 48 km distant and back in 14 hours. If he rows 4 km with the stream in the same time as 3 km against it, the speed of the boat in still water is:

✓ 1) 7 km /hour
✗ 2) 6 km /hour
✗ 3) 6.5 km /hour
✗ 4) 5 km /hour

Q.8

How many triangles are there in the following figure?



✓ 1) 28
✗ 2) 32
✗ 3) 22
✗ 4) 24

Q.9

Among 5 friends, A is weaker than C but stronger than D. C is weaker and shorter than E. E is shorter than A, but taller than D. B is stronger than E and taller than A.
Who is both the strongest and tallest?

✗ 1) A
✗ 2) E
✗ 3) C
✓ 4) B

Q.10

In a certain code, the word NUMERAL is written as ELNUARM. How would the word MONSTER be written in that code?

✗ 1) SRMEOTN

2) SRMOETN
3) STNOERM
4) SMREONT

Comprehension:

A solid cube is painted green on two opposite faces and red on the remaining ones. It is then cut into 64 smaller cubes. Answer the following questions.

Q.11 SubQuestion No. :1

How many smaller cubes will have only 2 faces painted, one with red and the other with green?

1) 16
2) 24
3) 32
4) 8

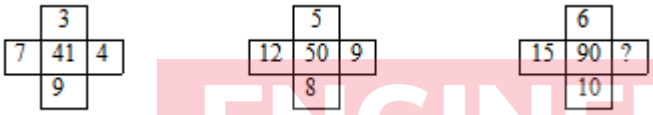
Q.12 SubQuestion No. :2

How many smaller cubes will have only two red-colored faces?

1) 10
2) 12
3) 8
4) 16

Q.13

Choose the missing number from among the alternatives.



1) 5
2) 11
3) 7
4) 9

Q.14

P+Q means P is the mother of Q. PxQ means P is the father of Q. P-Q means P is the sister of Q. Which of the following shows that B is the aunt of A?

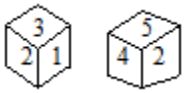
1) B-DxA
2) B-DxC+A
3) A-DxB
4) BxA-D

Q.15 Which is missing in the following sequence of letter clusters?

adcb, ehgf, jmlk, ? , wzyx

✗ 1) psqr
✓ 2) psrq
✗ 3) orqp
✗ 4) qtsr

Q.16 Two faces of a cube are given below. Which number will be opposite 5?



✗ 1) 3
✗ 2) 5
✗ 3) 4
✓ 4) 2

Q.17 Which is the odd number-pair?

✗ 1) 5-30
✗ 2) 9-90
✓ 3) 4-24
✗ 4) 8-72

Q.18 In a class of 45, where boys are twice that of girls, Reeta ranked 14th from the top. If there are 6 girls ahead of Reeta, how many boys are after her?

✗ 1) 24
✓ 2) 23
✗ 3) 8
✗ 4) 25

Q.19 How many times '7' is immediately followed by 9 but not immediately preceded by an odd number ?

6 7 9 7 4 5 7 9 8 7 9 2 4 7 9 7 3 7 9 1 7 9 7 2 7 9 3

✓ 1) 4
✗ 2) 3
✗ 3) 5

✗ 4) 2

Q.20 If in each of the following numbers, the positions of the first and the fourth digits are interchanged and so also the second and the third digits, what will be the difference between the highest and the lowest numbers after rearrangement?

2945, 7321, 5789, 6562, 4953

✗ 1) 6398
✗ 2) 6848
✗ 3) 8645
✓ 4) 8638

Q.1 कौन-सा सरकारी पत्र नहीं है?

✗ 1) एक राज्य सरकार से दूसरी सरकार को लिखा गए पत्र
✗ 2) राज्य सरकार द्वारा अपने अधिनस्त विभागों को लिखा गए पत्र
✗ 3) केंद्र सरकार द्वारा राज्य सरकार को लिखा गया पत्र
✓ 4) एक अधिकारी द्वारा दूसरे अधिकारी को लिखा गया पत्र

Q.2 निम्नलिखित में से शब्द का शुद्ध रूप कौन-सा है?

✗ 1) विधवंश
✗ 2) विध्वंष
✗ 3) विध्वंश
✓ 4) विध्वंस

Q.3 'निर्माण' का विलोम शब्द कौन-सा है?

✓ 1) विनाश
✗ 2) ध्वंस
✗ 3) नाश
✗ 4) नष्ट

Q.4 कौन-सा वाक्य शुद्ध है?

✗ 1) प्रधानमंत्री का निवेदन करना चाहता हूँ
✗ 2) प्रधानमंत्री को निवेदन करना चाहता हूँ
✓ 3) प्रधानमंत्री से निवेदन करना चाहता हूँ
✗ 4) प्रधानमंत्री के लिए निवेदन करना चाहता हूँ

Q.5 कनक' शब्द का पर्यायवाची शब्द कौन-सा है?

✗ 1) विष
✓ 2) स्वर्ण
✗ 3) पर्वत
✗ 4) सर्प

Q.6 जहाँ जाना कठिन हो' वाक्यांश के लिए उपयुक्त शब्द होगा-

✓ 1) दुर्गम
✗ 2) दुर्बोध
✗ 3) दुर्गति
✗ 4) अगम्य

Comprehension:

आप लोगो ने क्या कभी शुद्ध हृदय से इस पर विचार किया है कि माता, मातृभूमि और मातृभाषा का आप पर कुछ ऋण भी है अथवा नहीं! एक आपको जन्म देती है, एक की गोद में खेल कूदकर और खा-पीकर आप पुष्ट हुए हैं और एक आपको अपने भावों, विचारों को प्रकट करने की शक्ति दे, आपके सांसारिक जीवन को सुखी बनाती है, जिसका आप पर इतना उपकार है जिसके लिए कुछ करना क्या आपका परम कर्त्तव्य नहीं है? प्यारे भाइयों! उठो, आलस्य छोड़ो, कमर कसो और अपनी मातृभूमि की सेवा में तत्पर हो जाओ। अपने को मातृऋण से मुक्त करें, संसार में सपूत कहलाओ और मातृ सेवकों में अपनी कीर्ति छोड़ जाओ । हाँ, ध्यान रहै, यह व्रत साधारण नहीं है। इसके व्रती बनकर रहना तलवार की धार पर चलने के समान है।

Q.7 SubQuestion No. :1

इस अवतरण में किसकी सेवा करने के लिए कमर कसने को कहा गए है?

✗ 1) जन्मदायी माता की
✗ 2) भावों और विचारों की
✗ 3) मातृभाषा की
✓ 4) जन्मभूमि की

Q.8 SubQuestion No. :2

तलवार की धार पर चलने से आशय है -

✗ 1) तलवार गाड़ कर उसकी धार पर चलना
✓ 2) कार्य का अत्यधिक कष्ट साध्य होना
✗ 3) व्रती को भयभीत करना
✗ 4) अपने को संकट में डालना

Q.9 SubQuestion No. :3

हमें अपने भावों को प्रकट करने की शक्ति कौन देती है

1) जन्मदायी माँ
2) कविता
3) मातृभाषा
4) मातृभूमि

Q.10 निम्नलिखित मुहावरों का सही अर्थ कौन-सा है? 'अंधे की लाठी'

1) एकमात्र सहारा
2) काली लाठी
3) मुर्ख व्यक्ति
4) टूटी हुई लाठी

Q.1 A beam carries a uniformly distributed load throughout its length. In which of the following configurations, will the strain energy be maximum-

1) Cantilever
2) Fixed beam
3) Simply supported beam
4) Propped cantilever

Q.2 A dimensionless group formed with the variables ρ (density), ω (angular velocity), μ (dynamic viscosity) and D (characteristic diameter) is

1) $\rho \mu D / \omega$
2) $\rho \omega \mu / D^2$
3) $\omega \mu D^2 / \rho$
4) $\mu / \rho \omega D^2$

Q.3 Which one of the following represents the specific speed of turbine?

1) $NP^{1/2}/H^{5/4}$
2) $NQ^{1/2}/H^{3/4}$
3) $NQ^{1/2}/H^{5/4}$
4) $NP^{1/2}/H^{3/4}$

Q.4 If is the blade angle at the outlet, then the maximum hydraulic efficiency of an ideal impulse turbine is-

1) $(1+\text{Sin}\alpha)/2$
2) $(1+\text{Cos}\alpha)/2$
3) $(1-\text{Sin}\alpha)/2$
4) $(1-\text{Cos}\alpha)/2$

Q.5 The ratio of elongations of conical bar due to its own weight and that of prismatic bar of same length is –

✔ 1) 1/3
✘ 2) 1/5
✘ 3) 1/2
✘ 4) 1/4

Q.6 In a wet soil mass, air occupies 1/6 of its volume and water occupies 1/3 of its volume. The void ratio of the soil is:-

✘ 1) 0.67
✔ 2) 1
✘ 3) 0.25
✘ 4) 0.5

Q.7 The reading taken on a station by level, whose elevation is known, is termed as:-

✘ 1) Intermediate sight
✘ 2) Fore bearing
✘ 3) Fore sight
✔ 4) Back sight

Q.8 The percentage of fresh water available as polar ice/glaciers compared to total fresh water is :-

✔ 1) 69.61%
✘ 2) 30%
✘ 3) 0.04%
✘ 4) 0.261%

Q.9 By approximate method, the computation of N-component at the time of sudden drawdown condition, the weight is considered as:-

✘ 1) Dry unit weight
✘ 2) Saturated unit weight
✘ 3) Bulk unit weight
✔ 4) Submerged unit weight

Q.10 The acceptable noise level for banks/big offices are:-

✘ 1) 65 to 105 db
✔ 2) 50 to 60 db

✗ 3) 105 to 120 db
✗ 4) 60 to 65 db

Q.11

Separation of fluid flow is caused by

✗ 1) Reduction of pressure in the direction of flow
✓ 2) Presence of adverse pressure gradient
✗ 3) Presence of favorable pressure gradient.
✗ 4) Reduction of the boundary layer thickness

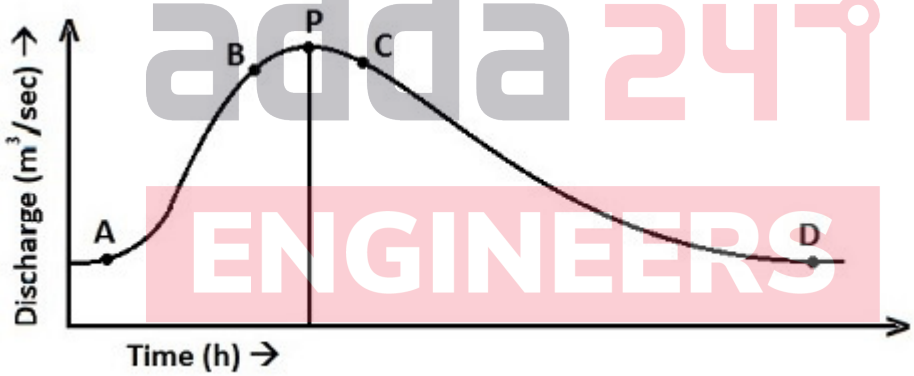
Q.12

Some facts about pile foundation is given below. Find the correct combination:-
i. Loads are heavy
ii. Loads are light
iii. Soil stratum near ground surface is week
iv. Soil stratum near ground surface is strong

✗ 1) (ii) and (iv)
✗ 2) (i) and (iv)
✓ 3) (i) and (iii)
✗ 4) (ii) and (iii)

Q.13

In given hydrograph the peak or crest segment is indicated by:-



✗ 1) BP
✓ 2) BC
✗ 3) AB
✗ 4) PC

Q.14

The core period for a Rabi crop is:-

✓ 1) 4 week
✗ 2) 3 week

3) 2 week
4) 5 week

Q.15 Unfactered maximum bending moments at a section of a reinforced concrete beam are 50, 80, 120 and 180kNm under dead, live , wind and earthquake load respectively. The design moment as per IS : 456-2000 for limit state of collapse (flexure) is :-

1) 250 kNm
2) 372 kNm
3) 195 kNm
4) 315 kNm

Q.16 When the water table rises to the ground level then the ultimate bearing capacity of a shallow foundation on sand is reduced to following percentage.

1) 30%
2) 20%
3) 50%
4) 70%

Q.17 If a tension member is subjected to possible reversal of stresses due to wind, the slenderness ratio of the member should not exceed -

1) 350
2) 180
3) 250
4) 200

Q.18 The permissible limit of Biochemical – oxygen demand in water to be supplied in houses should be (in PPM)

1) Zero
2) 150
3) 100
4) 200

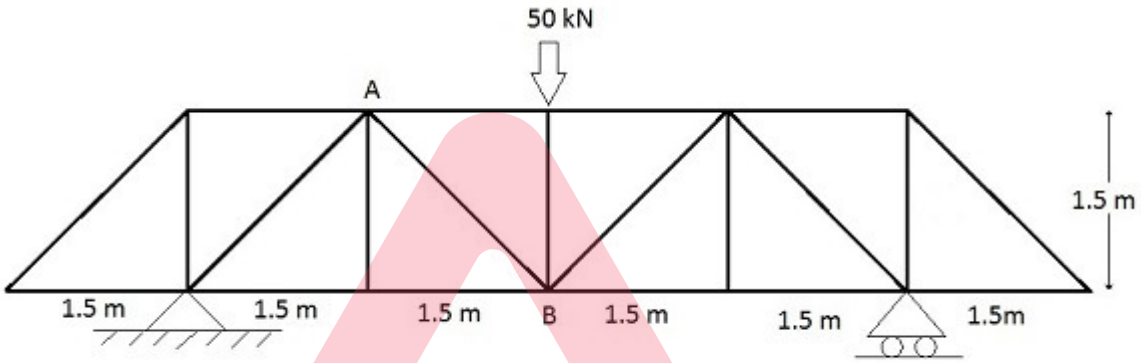
Q.19 On national and state highway the speed limit sign are fixed some distance ahead from where the speed limit actually start. This distance should be:-

1) 80m
2) 100m
3) 120m
4) 60m

Q.20 Coefficient of discharge in terms of orifice is, actual discharge 'a' and ideal discharge 'd' is

1) d/a
2) a/d
3) (a+d)/d
4) (a-d)/d

Q.21 Force in member 'AB' of the truss shown below is:-

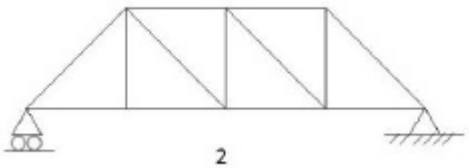


1) $25\sqrt{2}$ kN tensile
2) 25 kN tensile
3) $25\sqrt{2}$ kN compressive
4) 25 kN compressive

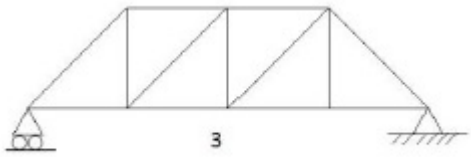
Q.22 Which of the following truss is unstable –

1)

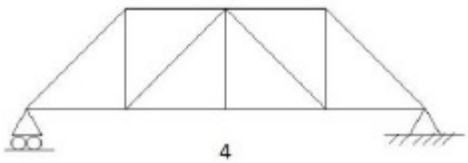
2)



3)



4)



Q.23 The rise and fall along the road is known as :-

1) Super elevation
2) Slope
3) Camber
4) Side slope

Q.24 Which one of the following sections performs better on the ductility criterion:-

1) Under reinforced section
2) Balanced section
3) Non prismatic section
4) Over reinforced section

Q.25 Taylor's –stability chart are based on the total stresses using:-

1) Method of slices
2) Culmann's method
3) $\Phi_u = 0$ Analysis
4) Friction circle method

Q.26 If the diameter of longitudinal bars of a square column is 16mm, the diameter of lateral ties should not be less than

1) 6 mm
2) 2mm
3) 4 mm
4) 8 mm

Q.27 Maximum number of vehicles that can pass a given point on a lane during one hour without creating unreasonable delay is known as -

✔ 1) Practical capacity
✘ 2) Basic capacity
✘ 3) Traffic density
✘ 4) Probable capacity

Q.28 The degree of kinematic indeterminacy of the rigid frame shown below is –

✘ 1) 4
✔ 2) 3
✘ 3) Zero
✘ 4) 2

Q.29 The noise pollution which produces pain in the heart and narrowing of arteries comes under following effect:-

✔ 1) Physiological effect
✘ 2) Psychological effect
✘ 3) Physical effect
✘ 4) Mental stress effect

Q.30 The turbidity in water is due to:-

✘ 1) Sulphate and chlorides of calcium and magnesium
✔ 2) Clay and Silt particles
✘ 3) Sand particles
✘ 4) Pathogens

Q.31 Ratio of deflections of free end of cantilever due to a concentrated load at 1/3rd and 2/3rd of the span is –

✘ 1) 3/7

2) 4/7
3) 2/7
4) 1/7

Q.32 According to I.S. classification system, the soil can be classified into:-

1) 15 groups
2) 7 groups
3) 3 groups
4) 18 groups

Q.33 What will be the stream function of flow of an incompressible fluid is defined by u=2, v=8x.

1) $\psi=2x^2+2xy+c.$
2) $\psi=2x+8y^2+c.$
3) $\psi=2y+8x+c$
4) $\psi=-4x^2+2y+c.$

Q.34 The equation of a parabolic arch of span 'l' and rise 'h' is given by:-

1) $y = (h/l^2)x\ (l-x)$
2) $y = (3h/l^2)\ x(l-x)$
3) $y = (2h/l^2)x\ (l-x)$
4) $y = (4h/l^2)\ x(l-x)$

Q.35 If telescope of a theodolite can rotate about its horizontal axis in the vertical plane completely then the theodolite is termed as:-

1) Optical theodolite
2) Azimuth theodolite
3) Transit theodolite
4) Non-transit theodolite

Q.36 From high level water resource, the water supply system used is termed as:-

1) Pumping and storage system.
2) Pumping system
3) Gravity system
4) Dual system

Q.37 If (L) is the total head at inlet and (l) is the head loss due to friction, efficiency of power transmission through a straight pipe is given by

1) L- l/ L
2) L- l/L + l
3) L /L + l
4) L /L – l

Q.38 When rain falls as water droplets of size less than 0.5mm, so light in weight to appear as floating in air , is termed as :-

1) Drizzle
2) Snow
3) Dew
4) Rain

Q.39 The intensity of longitudinal stress in the cross section of a beam at any distance'd' from the neutral axis, is proportional to –

1) d
2) $1/d^3$
3) $1/d^2$
4) 1/d

Q.40 Air flows through a duct, and the Pitot-static tube measuring the velocity is attached to a differential manometer containing water. If the deflection of the manometer is 100mm, assuming the density of air is constant and equals to 1.22kg/m3 , and that the coefficient of the tube is 0.98. The air velocity will be.

1) 0.393 m/s
2) 4.07 m/s
3) 3.93 m/s
4) 39.3 m/s

Q.41 What is the correct sequence of the following metals in the decreasing order of their poisson's ratio –
(a) Aluminum (b) Cast iron (c) Steel

1) (b)-(a)-(c)
2) (c)-(a)-(b)
3) (a)-(b)-(c)
4) (a)-(c)-(b)

Q.42 The load carrying capacity of a board pile in sand in comparision to a driven pile will be :-

1) 5/4 to 3/4

✗ 2) 3/4 to 2/3
✗ 3) more than 5/4
✓ 4) 2/3 to 1/2

Q.43 For a particular crop during its base period the unit water flowing day and night to irrigate the crop area is known as:-

✓ 1) Duty
✗ 2) Crop period
✗ 3) Base period
✗ 4) Delta

Q.44 In a simply supported beam of span (L+2a) with equal overhang (a) carries a uniformly distributed load over the whole length. Bending moment changes sign if –

✗ 1) L = 2a
✗ 2) L <2a
✗ 3) L = 3a
✓ 4) L >2a

Q.45 Web crippling generally occurs at the point where:-

✓ 1) Concentrated load acts
✗ 2) Shearing force is maximum
✗ 3) Deflection is maximum
✗ 4) Bending moments is maximum

Q.46 Which one of the following options is true for combined system of sewerage system:-

✗ 1) Sewage and rain water
✓ 2) Dry weather flow and rain water
✗ 3) Sewage and industrial waste
✗ 4) Industrial waste and rain water

Q.47 The displacement method is also referred to as which one of the following –

✗ 1) Minimum strain energy method
✗ 2) Consistent deformation method
✓ 3) Slope deflection method
✗ 4) Maxwell Mohr method

Q.48 The ratio of immediate settlement of a rigid footing to the maximum settlement of an equal

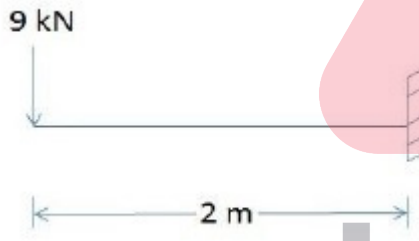
flexible footing will be:-

✗ 1) 0.6
✓ 2) 0.8
✗ 3) 0.7
✗ 4) 0.9

Q.49 What is the value of flexural strength of M 25 concrete:-

✗ 1) 1.75 M Pa
✗ 2) 3.0 M Pa
✗ 3) 4.0 M Pa
✓ 4) 3.5 M Pa

Q.50 For the cantilever beam shown below, the moment to be applied at free end for zero vertical deflection at that point is –?



✗ 1) 9 kN.m anti clockwise
✗ 2) 9 kN.m clockwise
✗ 3) 12 kN.m clockwise
✓ 4) 12 kN.m anti clockwise

Q.51 If a bar of cross section area 'A' is subjected to a tensile force 'P', resultant shear stress on a oblique plane inclined at an angle θ to its axis is –

✗ 1) (P/A) cos2θ
✗ 2) (P/A) sin2θ
✗ 3) (P/2A) cos2θ
✓ 4) (P/2A) sin2θ

Q.52 Increase in traffic volume due to increase in transport vehicles is known as-

✗ 1) Normal traffic growth
✓ 2) Generated traffic growth
✗ 3) Current traffic
✗ 4) Development Traffic

Q.53 If a constant section beam is subjected to a uniform bending moment throughout, it bends as –

1) zig zag
2) a catenary
3) a circular arc
4) a parabolic arc

Q.54 The ratio of tensile stress developed in the wall of a boiler in the circumferential direction to the tensile stress in the axial direction is –

1) 3
2) 4
3) 2
4) 1

Q.55 In plane table surveying the method in which the rays are drawn from station No. 1 towards objects then the plane table is shifted to second station, again from station No. 2 the rays are drawn towards the same objects then the cutting point represents the respective objects on map. This method is known as:-

1) Orientation method
2) Intersection method
3) Resection method
4) Radiation Method

Q.56 In a simply supported beam span 'L' with a triangular load varying from zero at one end to the maximum value 'W' at other end, maximum bending moment is –

1) $WL^2/9\sqrt{3}$
2) WL/3
3) $WL/9\sqrt{3}$
4) WL/4

Q.57 If 't' is the thickness of web of plate girder which is stiffened vertical then, the smallest clear dimension of a panel should not exceed:-

1) 85t
2) 180t
3) 250t
4) 200t

Q.58 The air pollution which is described as 'disease of wealth' is termed as:-

1) Natural pollution
2) Industrial pollution
3) Pollution due to transportation
4) Radioactive pollution

Q.59 The anchorage value of a hook is assumed four times the diameter of the bar if the angle of the bend is:-

1) 60^0
2) 30^0
3) 45^0
4) 40^0

Q.60 Solid waste treatment by pyrolysis refers to

1) Treating with chemicals before heating
2) No heating
3) Heating in presence of air
4) Heating in absence of air

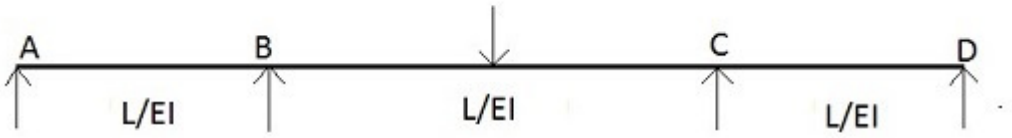
Q.61 How much increase in pressure will be, if a uniform surcharge of $120kN/m^2$ is placed on the back fill with $\Phi = 30°$

1) $12kN/m^2$
2) $120kN/m^2$
3) $30kN/m^2$
4) $40kN/m^2$

Q.62 The bacteria which survive on oxygen or oxygen dissolved in water are known as:-

1) Facultative and Anaerobic both
2) Aerobic
3) Facultative
4) Anaerobic

Q.63 For a symmetric continuous beam shown below, which is the correct distribution at B –



1) $\delta_{BA}:\delta_{BC}=3:8$
2) $\delta_{BA}:\delta_{BC}=3:4$
3) $\delta_{BA}:\delta_{BC}=1:2$
4) $\delta_{BA}:\delta_{BC}=3:2$

Q.64 The maximum depth of foundation, according to the Rankine's formula will be:-
(Given that q = 180 KN/m^2, γ = 20KN/m^2 and $\Phi = 30°$)

1) 0.8m
2) 1m
3) 2m
4) 0.5m

Q.65 Waste item that is usually not recycled -

1) Plastic waste
2) Vegetable waste
3) Glass waste
4) Paper waste

Q.66 A solid cube is subjected to equal normal forces on all its faces. Volumetric strain will be how many times of the linear strain.

1) 4
2) 3
3) 1
4) 2

Q.67 Which one of the following is used to kill the pathogens?

1) Chlorination

2) Oxidation
3) Nitrification
4) Ozone

Q.68 The soil formed by weathering action on rock and remain at the place of formation is called as :-

1) Alluvial soil
2) Residual soil
3) Marine soil
4) Aeolin soil

Q.69 If 'p' and 'd' are pitch and gross diameter of rivets, the efficiency of the rivets joint is:-

1) p/(p-d)
2) p/(p+d)
3) (p-d)/p
4) (p+d)/p

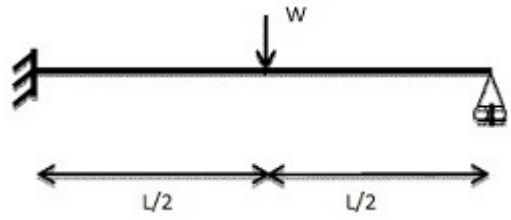
Q.70 A simply supported beam with two equal spans carries uniformly distributed load 'W' on entire length of beam. If each span has length 'L' the bending moment at the central support is –

1) $WL^2/12$
2) $WL^2/4$
3) $WL^2/2$
4) $WL^2/8$

Q.71 The following assumption is not made for the friction circle method of slope stability analysis:-

1) The resultant passes through the centre of friction circle.
2) Friction is fully mobilised.
3) The resultant is tangential to the friction circle.
4) Total stress analysis is applicable.

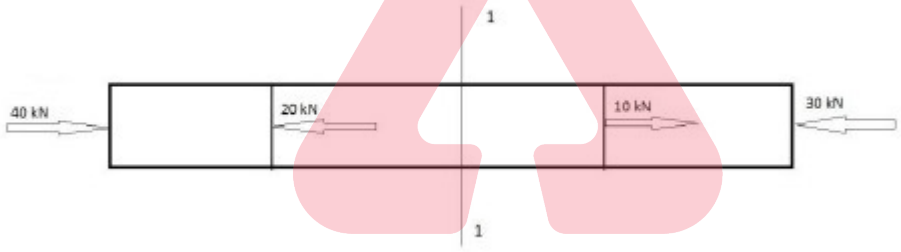
Q.72 The plastic moment capacity of the propped cantilever shown below is 'Mp' .What is the value of the collapse load:-



1) 4Mp/L
2) 8Mp/L
3) 12Mp/L
4) 6Mp/L

Q.73

A bar of uniform cross section of 400mm^2 is loaded as shown in figure below. The stress at section 1-1 is –



1) 125 N/mm^2
2) 50 N/mm^2
3) 100 N/mm^2
4) 200 N/mm^2

Q.74

For given two hinged semi circular arches A,B and C of radii 5m, 7.5m and 10m respectively and carrying concentrated crown load 'W', ratio of horizontal thrust at their support will be –

1) 2 : 1 ½ : 1
2) 1 : 1 ½ : 2
3) 1: 1 ½ :3
4) 1:1:2

Q.75

The meaning of active earth pressure coefficient (Ka) is:-

1) Passive stresses
2) Total stresses
3) Neutral stresses
4) Effective stresses

Q.76

The gases produced by landfills primarily comprised of:-

1) Ethane and oxygen
2) Sulphur dioxide and nitrogendioxide
3) Methane and carbondioxide
4) Carbon monoxide and hydrogen sulphide

Q.77

Consider the following strengths of concrete:-

a) Cube strength
b) Cylinder strength
c) Split tensile strength
d) Modulus of rupture

The correct sequence in increasing order of these strength is:-

1) c-d-a-b
2) d-c-a-b
3) c-d-b-a
4) d-c-b-a

Q.78

The ratio of the depth of the parabolic and rectangular portion block at the limiting state of collapse of a singly reinforced section is :-

1) 4:5
2) 4:3
3) 3:4
4) 2:1

Q.79

The much failure in foundation layers of flexible roads is known as -

1) Wearing course failure
2) Base course failure
3) Sub grade failure
4) Pavement failure

Q.80

The diagram which contains all three ingredients of a wet soil is termed as:-

1) Three phase diagram
2) One phase diagram
3) Two phase diagram
4) Bi phase diagram

Q.81

The second stage of water treatment is:-

1) Disinfection
2) Mixing and Coagulation
3) Sedimentation
4) Filtration

Q.82 Minimum area of tension reinforcement in a beam shall be greater than:-

1) 0.85bd/fy
2) 0.87 fy/bd
3) 0.4bd fy
4) 0.04 bd

Q.83 Which of the following is correct relation in terms of absolute pressure ($P_{abs)}$, atmospheric pressure (P_{atm}) and ($P_{gauge)}$ pressure Pgauge.

1) $P_{abs} = P_{gauge} + P_{atm}$
2) $P_{gauge} = P_{atm} - P_{abs}$
3) $P_{atms} = P_{abs} + P_{gauge}$
4) $P_{abs} = P_{gauge} - P_{atm}$

Q.84 In doubly reinforced beams, the percentage of the maximum compression reinforcement of the gross cross sectional area of beam should not exceed:-

1) 2%
2) 4%
3) 5%
4) 3%

Q.85 In rolled steel beams, shear force is mostly resisted by :-

1) Web only
2) Web and flanges together
3) Flanges only
4) Neutral axis

Q.86 A diagram which shows the variation of the axial load at all sections along the span of a beam is –

1) Thrust diagram
2) Bending moment diagram
3) Stress diagram

✗ 4) Shear force diagram

Q.87

A flow net is used to determine the following:-

✗ 1) Seepage and exist gradient only
✗ 2) Seepage, coefficient of permeability and exit gradient
✓ 3) Seepage, exist gradient and uplift pressure
✗ 4) Seepage, coefficient of permeability and uplift pressure

Q.88

To estimate the magnitude of a flood peak (Q_p) by the formula $Qp = 124\ A/\sqrt{(A+10.4)}$,where A = catchment area in km^2. This formula is termed as:-

✗ 1) Dicken's formula
✓ 2) Inglis formula
✗ 3) Ryves formula
✗ 4) Rational formula

Q.89

The mixer-grinders, desert coolers exhaust fans, sewing and washing machines are all sources of noise pollution. This pollution is termed as:-

✗ 1) Transport pollution
✗ 2) Industrial pollution
✗ 3) Pollution from public address system
✓ 4) Pollution from Household

Q.90

To maintain the aerobic condition of sewage, the sewage is mixed with a large quantity of water is known as:-

✗ 1) Sedimentation
✗ 2) Current
✓ 3) Dilution
✗ 4) Oxidation

Q.91

The Argon content in composition of clean, dry and atmospheric air in percentage by volume will be:-

✓ 1) 0.93%
✗ 2) 0.032%
✗ 3) 20.95%
✗ 4) 78.09%

Q.92

The tangent line drawn on a curve at its end is known as:-

✔ 1) Forward tangent
✘ 2) Back tangent
✘ 3) Long chord
✘ 4) Tangent distance

Q.93 Colluvial soils (talus) are transported by :-

✘ 1) Water
✘ 2) Wind
✔ 3) Gravity
✘ 4) Ice

Q.94 If present Average Daily Traffic (ADT) is 5000 vehicles and annual increase is 10%, then average future flow after 5 years will be –

✘ 1) 7050
✘ 2) 9050
✔ 3) 8050
✘ 4) 6050

Q.95 On which of the following factors, does strength of concrete depends primarily :-

✔ 1) Water cement ratio
✘ 2) Quality of fine aggregate
✘ 3) Fineness of cement
✘ 4) Quality of course aggregate

Q.96 To dispose waste water produced by public, the underground pipe line is laid down, which is known as:-

✔ 1) Sever
✘ 2) Drains
✘ 3) Cannel
✘ 4) Tunnel

Q.97 A pelton wheel with single jet rotates at 300rpm. The velocity of the jet from the nozzle is 100 m/s. If the ratio of the vane velocity to jet velocity is 0.44, what is the diameter of the pelton wheel?

✔ 1) 2.8m
✘ 2) 1.4m
✘ 3) 0.7m

✗ 4) 2.1m

Q.98

A 2-D flow field is defined as

$\vec{V} = \hat{\imath}x - \hat{\jmath}y.$

The equation of stream line passing through the point (1,1)

✓ 1) xy-1=0
✗ 2) x-y=0
✗ 3) 2x+2y=0
✗ 4) xy=0

Q.99

The soil which can store water and allow a small quantity to flow through it over a long period is called:-

✗ 1) Aquifer
✓ 2) Aquitard
✗ 3) Aquifuge
✗ 4) Aquiclude

Q.100

In-situ vane shear test is used to measure shear strength of:-

✗ 1) Sandy soil
✗ 2) Stiff clays
✓ 3) Very soft and sensitive clays
✗ 4) Gravel

Q.101

Which of the following sets of equation represent possible 2-D incompressible flows?

✓ 1) u=x+y ; v=x-y
✗ 2) $u=xt^2$; $v=xyt+y^2$
✗ 3) u=x+2y ; $v=x^2- y^2$
✗ 4) u=4x+y ; $v=x-y^2$

Q.102

The particulate which is emitted by combustion of petroleum in automobiles and which affects hemoglobin formation is:-

✓ 1) Lead
✗ 2) Mercury
✗ 3) Nickel
✗ 4) Cadmium

Q.103

The pollution which has far-reaching consequences and has many physical, physiological as

well as psychological effects on human beings is termed as:-

✗ 1) Air pollution
✗ 2) Water pollution
✗ 3) Marine pollution
✓ 4) Noise pollution

Q.104 A mild steel flat of width 120mm and thickness 10mm is bent into an arc of a circle of radius 10m, by applying a moment 'M'. If 'E' is 2×10^5 N/mm^2, magnitude of 'M' will be:-

✗ 1) 0.2×10^5 N.mm
✓ 2) 2×10^5 N.mm
✗ 3) 2×10^6 N.mm
✗ 4) 0.2×10^4 N.mm

Q.105 When plane table is set at any place, then the second temporary adjustment which is done is known as:-

✗ 1) Sighting
✗ 2) Orientation
✓ 3) Leveling
✗ 4) Centering

Q.106 IS 456 : 2000 recommends to provide certain minimum steel in RCC beam :-

✓ 1) to avoid rupture of steel in case a flexural failure occurs
✗ 2) to ensure compression failure
✗ 3) to hold the stirrups in position
✗ 4) to provide enough ductility to the beam

Q.107 If all dimensions of a simply supported beam is increased 'n' times , the ratio by which maximum bending stress will increase under its self weight is –

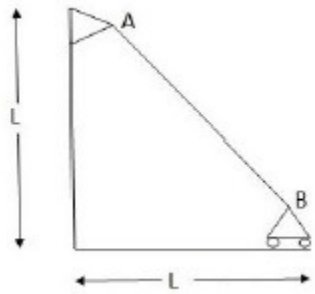
✓ 1) n : 1
✗ 2) (1/n) : 1
✗ 3) 1 : (1/n)
✗ 4) 1: n

Q.108 The diameter of a mandatory sign disc must be

✗ 1) 50 cm
✓ 2) 60 cm
✗ 3) 30 cm

✗ 4) 100 cm

Q.109 Horizontal stiffness coefficient (K11) of a bar 'AB' is given by –



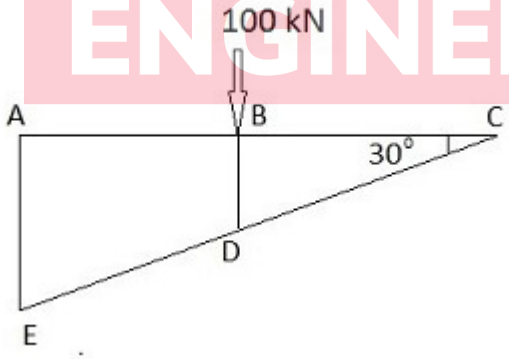
(Where A is cross section area and E is Young's Modulus)

✗ 1) AE/L
✓ 2) AE/√2L
✗ 3) 2AE/L
✗ 4) AE/2L

Q.110 For reinforced concrete structures to be constructed along sea coast minimum grade of concrete should be:-

✗ 1) M15
✗ 2) M20
✓ 3) M30
✗ 4) M25

Q.111 In the truss shown below, force in member BC is –



✗ 1) 100 N tensile
✓ 2) zero
✗ 3) 100 N compressive
✗ 4) 50 N tensile

Q.112 The length of an engineering chain is:-

1) 33ft.
2) 20ft.
3) 66ft.
4) 100ft.

Q.113 The standard penetration test is useful to measure:-

1) Consistency of clays
2) Shear strength of soft clays
3) Shear strength of sands
4) Shear strength of stiff clay

Q.114 The cement concrete roads are not preferred due to

1) It requires long time for curing
2) High initial cost
3) Iron tyres made more noise
4) More reflection of sun light to eyes

Q.115 Which of the following work is not performed by canal headwork-

1) To control the sitting in canal
2) To raise the water level of river water
3) To control the flow in the exiting canal
4) To generate the electricity power from water

Q.116 The following assumption is Not made, for design of a strap footing:-

1) The strap is perfectly rigid
2) The strap is not subjected to any direct soil pressure
3) The soil pressure varies linearly
4) The interior footing is centrally loaded

Q.117 A prestressed concrete rectangular beam of size 300×900mm is prestressed with an initial prestressing force of 700kN at an eccentricity of 350mm at midspan ,stress at top fibre at midspan due to prestress alone is :-

1) 46 MPa (tension)
2) 8.64 MPa (compression)
3) 2.59 MPa (compression)
4) Zero

Q.118 The velocity field in a fluid medium is given by

$\vec{V} = 3xy^2\,\hat{\imath} + 2xy\hat{\jmath} + (2zy + 3t)\hat{k}$

Find the magnitudes and direction of translational velocity at (1,2,1) and at time t=3.

✔ 1) $12\hat{\imath} + 4\hat{\jmath} + 13\hat{k}$

✘ 2) $2\hat{\imath} + \hat{\jmath} + 5\hat{k}$

✘ 3) $3\hat{\imath} + 2\hat{\jmath} + 5\hat{k}$

✘ 4) $-12\hat{\imath} + 4\hat{\jmath} + 13\hat{k}$

Q.119 The noise pollution produced by tractors, thrashers harvesters etc. can be categorized under:-

✔ 1) Agricultural machines pollution

✘ 2) Household pollution

✘ 3) Transport pollution

✘ 4) Defense equipment pollution

Q.120 Effective length of a column effectively held in position and festrained in directions at both ends is:-

✘ 1) L

✘ 2) 1.5L

✘ 3) 0.85L

✔ 4) 0.67L

Q.121 If a curve is made of two or more simple circular arcs in one direction and are meeting at a common tangent, such curve is known as :-

✘ 1) Transition curve

✘ 2) Reverse curve

✘ 3) Simple circular curve

✔ 4) Compound curve

Q.122 The modular ratio 'm' of a concrete whose permissible compressive stress is 'C', may be given by:-

✘ 1) m = 700/3C

✔ 2) m = 2800/3C

✘ 3) m = 3500/3C

✘ 4) m = 1400/3C

Q.123

Slenderness ratio of a medium column is between

1) 125 to 160
2) 20 to 30
3) 32 to 120
4) 165 to 180

Q.124 Irrigation channel are usually kept along the one of the following:-

1) Valley
2) Water shed
3) Contour line
4) Straight line

Q.125 The radius of the friction circle is equal to:-

1) R Sin Φ
2) R Φ
3) R tan Φ
4) R cos Φ

Q.126 Following is not recommended for management of plastic waste

1) Autoclave
2) Deep burial
3) Incineration
4) Hydroclave

Q.127 In chain surveying work, the line joining tie stations for taking offsets from it, is known as :-

1) Tie line
2) Check line
3) Chain line
4) Base line

Q.128 Find the correct pair-

1) Kinematic viscosity – ρ/μ (Density/dynamic viscosity)
2) Fluid of zero viscosity – Ideal fluid
3) Ideal fluid – kinematic viscosity
4) Viscous fluid- Fluid of zero viscosity

Q.129 The permeability of soil varies:-

1) 1/void ratio
2) Grain size
3) (Grain size) ^{2}
4) 1/(Grain size)^2

Q.130 The nominal diameter of the bolt is 14 mm then the diameter of bolt hole will increase by-

1) 1.0 mm
2) 1.5 mm
3) 2.0 mm
4) 1.25 mm

Q.131 If the liquid limit is increased then, the compression index of soil will:-

1) Increase
2) May increase or decrease
3) Decrease
4) Remain constant

Q.132 The particulate contaminants are removed from the polluted gas stream by incorporating the particulates into liquid droplets are termed as:-

1) Electrostatic precipitators
2) Fabric filters
3) Cyclone separators
4) Wet collectors

Q.133 The value of maximum permissible super elevation in a road is:-

1) 1 in 30
2) 1 in 15
3) 1 in 18
4) 1 in 12

Q.134 For simply supported steel beams, maximum permitted deflection is:-

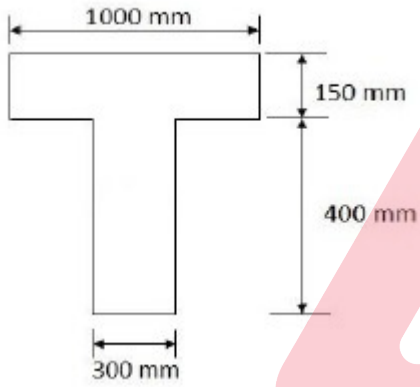
1) 1/375 of span
2) 1/400 of span
3) 1/350 of span
4) 1/325 of span

Q.135 In a closed traverse if the numbers of lines are ‘n’ then the sum of all the internal angles will

be (in Right Angles)

✓ 1) 2n-4
✗ 2) 4n-2
✗ 3) n+2
✗ 4) 2n+4

Q.136 A simply supported isolated 'T' beam of 6m span shown below is used as a walkway. The effective width of the flange is:-



✗ 1) 1000mm
✓ 2) 900mm
✗ 3) 2200mm
✗ 4) 1259mm

Q.137 Allowable disposable rate of application of sludge on land is determined by:-

✗ 1) Carbon content of sludge
✗ 2) Potassium content of sludge
✓ 3) Nitrogen content of sludge
✗ 4) Phosphorous content of sludge

Q.138 A shaft rotating at 150rpm is subjected to a torque of 1500 N.m. Horse power transmitted by the shaft is –

✗ 1) π^2
✗ 2) π
✓ 3) 10π
✗ 4) $1/10\pi$

Q.139 The maximum permissible settlement is, in case of:-

✗ 1) Isolated footing on sand

2) Raft in clay
3) Isolated footing on clay
4) Raft in sand

Q.140 According to the Indian road congress the ruling slope of roads should not be more than:-

1) 1 in 18
2) 1 in 15
3) 1 in 20
4) 1 in 30

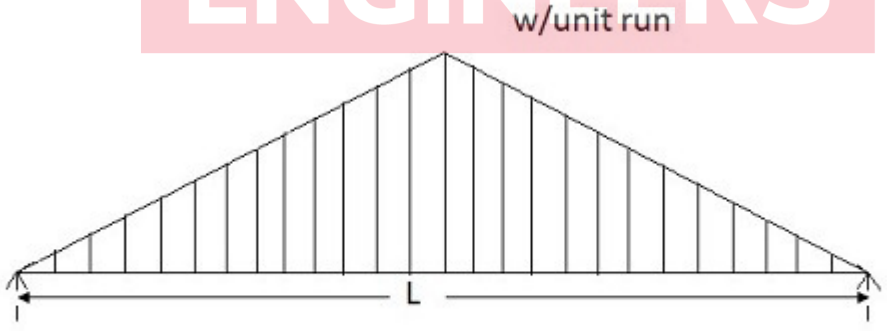
Q.141 During stability analysis, the term mobilised shear strength means:-

1) Shear strength
2) Applied shear stress
3) Maximum shear stress
4) Minimum shear stress

Q.142 To make potable water by killing harm full pathogens present in water is termed as:-

1) Purification
2) Disinfection
3) Sterilization
4) Chlorination

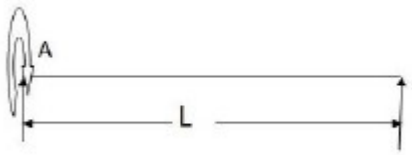
Q.143 What is the maximum bending moment at mid span of the beam given below –



1) $wl^2/6\sqrt{2}$
2) $wl^2/6$

✔ 3) $wl^2/12$
✘ 4) $wl^2/2$

Q.144 The bending moment diagram of the beam shown in figure is –



✘ 1) a trapezium
✔ 2) a triangle
✘ 3) a parabola
✘ 4) a rectangle

Q.145 Minimum quantity of water at which the soil can be rolled in 3mm dia threads without cracks is termed as :-

✔ 1) Plastic limit
✘ 2) Plasticity index
✘ 3) Shrinkage limit
✘ 4) Liquid limit

Q.146 What is permissible tensile stress of bolts used for column bases:-

✔ 1) 120 N/mm^2
✘ 2) 150 N/mm^2
✘ 3) 220 N/mm^2
✘ 4) 180 N/mm^2

Q.147 The atmospheric condition in which certain substances are present in such concentration that affect the health of humans, animals, plants and property is known as:-

✘ 1) Water pollution
✘ 2) Marine pollution
✔ 3) Air pollution
✘ 4) Noise pollution

Q.148 In furrow irrigation the depth of furrows from ground level is kept as:-

✘ 1) 40 to 50 cm
✘ 2) 5 to 10 cm

3) 10 to 20 cm
4) 20 to 30 cm

Q.149 The line joining the centre of objective glass to the centre of cross wires is termed as:-

1) Turning axis of telescope
2) Stadia line
3) Optical axis of telescope
4) Line of collimation

Q.150 When pressure drag over a body is large as compared to the friction drag, then the shape of the body is that of-

1) a bluff body
2) An aerofoil
3) a-2-dimensional body
4) A streamlined body