TCSiON CAE

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	CIVIL 14th MAY SHIFT1
Subject Name :	Environmental Engineering-Civil
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0

Question Number : 1 Question Id : 63068068947 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS 456:2000, the static modulus of elasticity of M25 grade concrete is_____.

Options :

1. ✖ 20000 N/mm^2
2. ✔ 25000 N/mm^2
3. ✖ 200 N/sq mm
4. ✖ 250 N/sq mm

Hints :

Review_Civil-Concrete structures Set 1&2_NM_PG_19 Clear_Translation Template_P1E1
Ec = 5000 fck^0.5

Question Number : 2 Question Id : 63068068948 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS 456:2000, the partial factor of safety to be considered for steel reinforcement to asses the strength of a steel reinforced cement concrete structure, according to limit state method of design is_____.

Options :

1. ✖ 1.5
2. ✔ 1.15
3. ✖ 1.65
4. ✖ 2

Hints :

Review_Civil-Concrete structures Set 1&2_NM_PG_19 Clear_Translation Template_P1E1
Reinforced Concrete Design, Pillai and Menon, Tata McGraw Publishing company

Question Number : 3 Question Id : 63068066444 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following statements are INCORRECT?

Statement 1: Microsilica is a chemical admixture used in making concrete.
Statement 2: Microsilica particles are spherical in shape.
Statement 3: Mean particle size of micro silica ranges between 10 to 90 microns.
Statement 4: Specific surface are of micro silica is in the range of 20000 m^2/kg.

Options :

1. ✖ Statements 1 and 2 are incorrect
2. ✔ Statements 1 and 3 are incorrect
3. ✖ Statements 2 and 3 are incorrect
4. ✖ Statements 3 and 4 are incorrect

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
Micro Silica is initially produced as ultra-fine, un-densified powder and the Mean Particle size of Micro Silica is between 0.1 – 0.2 microns

Question Number : 4 Question Id : 63068066447 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS 10262 : 2019, if angular coarse aggregates are replaced by sub-angular coarse aggregates in normal concrete, the quantity of mixing water per unit volume of concrete can be _____ to produce the same workability as that of angular coarse aggregates.

Options :

1. ✔ reduced by 10 kg
2. ✖ reduced by 20 kg
3. ✖ increased by 10 kg
4. ✖ increased by 20 kg

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
As per IS 10262: 2019, the quantity of mixing water per unit volume of concrete can be reduced by 10 Kg to produce the same workability as that of angular coarse aggregates if angular coarse aggregates are used.

Question Number : 5 Question Id : 63068066449 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per National building code of India: 2016 (volume 1- part 4), Which of the following civil engineering facility is classified as Group H buildings?

Options :

1. ✔ Warehouses
2. ✖ Railways
3. ✖ Oil refineries
4. ✖ Highways

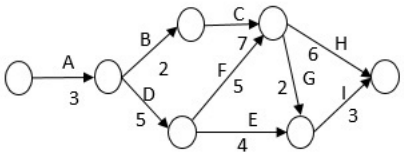
Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
Ware House project is classified under light construction.Railways and Highways are classified under heavy construction. Oil Refineries are classified under industrial construction

Question Number : 6 Question Id : 63068066453 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The critical path for the given network diagram is _____.



Options :

1. ✖ A – B – C – H
2. ✔ A – D – F – H
3. ✖ A – D – F – G – I
4. ✖ A – D – E – I

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
Critical Path is the path in a network connecting initial and final nodes and has a maximum duration.Path A – B –C – H has a duration of 18 days.Path A – D – F – G – I has a duration of 18 days.Path A – D – E - I has a duration of 15 days.Path A – D – F – H has a duration of 19 days. Hence the solution.

Question Number : 7 Question Id : 63068066464 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS 456-2000, what is the value of slump for degree of workability 'High'? Consider the placing condition as Tremie concrete.

Options :

1. ✖ 25 – 50 mm
2. ✖ 50 – 100 mm
3. ✖ 10 – 150 mm
4. ✔ 100 – 150 mm

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
The workability of concrete for under water concreting using tremie pipe should be 150 – 200 mm

Question Number : 8 Question Id : 63068066465 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

D-cracking on concrete slabs is caused due to _____.

Options :

1. ✖ thermal expansion
2. ✖ surface wear
3. ✔ freezing and thawing
4. ✖ crystallisation of salts in pores

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
Concrete slabs subjected to freezing and thawing causes D-Cracking

Question Number : 9 Question Id : 63068066466 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Pre-planning phase of a construction project does NOT involve _____.

Options :

1. ✖ formulation of general framework
2. ✖ cost-benefit analysis
3. ✖ investment alternatives
4. ✔ placing and tying reinforcement

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
Specifications are prepared during Detailed Planning

Question Number : 10 Question Id : 63068066467 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The function of management that involves proper communication, leadership and motivation to accomplish the set objectives is _____.

Options :

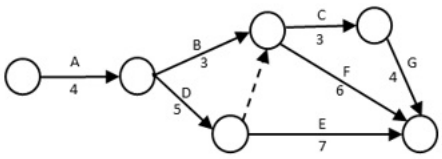
1. ✖ coordination
2. ✖ controlling
3. ✔ directing
4. ✖ organising

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
Directing involves proper communication, leadership and motivation to accomplish the set objectives.

Question Number : 11 Question Id : 63068066468 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1



From the given network diagram, the total float for activity C and activity E is _____.

Options :

1. ✖ 1 and 0, respectively
2. ✖ 0 and 1, respectively
3. ✖ 1 and 1, respectively
4. ✔ 0 and 0, respectively

Hints :

Civil Engg_K M Chaitanya_Const Material Mgmt_Set 1&2
Activity C
EST = 9, EFT = 12, LST = 9, LFT = 12
Total Float = LFT-EFT or LST-EST = 12-12 or 9-9 = 0
Activity E
EST = 9, EFT = 16, LST = 9, LFT = 16
Total Float = LFT-EFT or LST-EST = 16-16 or 9-9 = 0

Question Number : 12 Question Id : 63068067131 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following property of water is determined by EDTA (ethylene-diaminetetraacetate) titration?

Options :

1. ✔ hardness in water
2. ✖ turbidity in water
3. ✖ dissolved oxygen in water
4. ✖ residual chlorine in water

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
EDTA is the titrant to measure hardness of water.

Question Number : 13 Question Id : 63068067143 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The cleaning of slow sand filter is done by:

Options :

1. ✔ scrapping
2. ✖ back washing
3. ✖ air cleaning
4. ✖ mechanical staining

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Cleaning of slow sand filter is done by scratching process

Question Number : 14 Question Id : 63068067145 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following comparision is correct with respect to rate of filteration in water purification?. Where SSF=slow sand filter, RSF=rapid sand filter, DMF=dual media filter and MMF=mixed media filter.

Options :

1. ✖ MMF ≥ RSF > DMF > SSF
2. ✔ MMF ≥ DMF > RSF > SSF
3. ✖ DMF < MMF ≥ RSF < SSF
4. ✖ DMF ≥ MMF < RSF > SSF

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
ROF OF MMF= 15000-20000 lt/hr-m^2
ROF OF DMF=10000-15000 lt/hr-m^2
ROF OF RSF= 3000-5000 lt/hr-m^2

Question Number : 15 Question Id : 63068067148 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In a water treatement process by sedimentation the flocculent particles follows_____.

Options :

1. ✖ Type - I settling
2. ✔ Type - II settling
3. ✖ Type - III settling
4. ✖ Type - IV settling

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 16 Question Id : 63068067149 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following statements about the tube settler is INCORRECT?

Options :

1. ✖ It is the combination of multiple channels at an angle of 60°.
2. ✖ Settling depth is less than conventional one.
3. ✖ Settling time is less than conventional one.
4. ✔ Effective settling area is decreased by providing multiple tubular channels sloped at an angle of 60° and adjacent to each other.

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 17 Question Id : 63068067151 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The horizontal tunnels constructed at shallow depths along the banks of a river to intercept ground water tables are called_____.

Options :

1. ✖ canals
2. ✔ infiltration galleries
3. ✖ springs
4. ✖ lakes

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 18 Question Id : 63068067152 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Copper sulfate is most commonly used(added) to control_____in lakes.

Options :

1. ✖ chlorine demand of water
2. ✔ growth of algae
3. ✖ dispersion of silt
4. ✖ suspended particles

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 19 Question Id : 63068067154 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS 10500:2012, the mximum permissible limit for fluoride content present in drinking water shall not exceed _____in the absence of alternate source.

Options :

1. ✖ 0.015 ppm
2. ✔ 1.5 ppm
3. ✖ 15 ppm
4. ✖ 150 ppm

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 20 Question Id : 63068067155 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

B-coli or E-coli are harmless organisms, but their presence in water indicates the:

Options :

1. ✔ presence of pathogenic bacteria
2. ✖ absence of pathogenic bacteria
3. ✖ presence of non-pathogenic bacteria
4. ✖ absence of non-pathogenic bacteria

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 21 Question Id : 63068067157 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

When centrifugal pump is used to lift water, the direction of flowing water is changed by_____.

Options :

1. ✖ 45°
2. ✖ 60°
3. ✔ 90°
4. ✖ 180°

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 22 Question Id : 63068067158 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following can measure the head loss?

Options :

1. ✖ Weir
2. ✖ Notch
3. ✖ Scrubber
4. ✔ Piezometer

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 23 Question Id : 63068067160 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A surge tank is a storage reservoir at the _____ end of a close aqueduct to absorb a sudden _____ of pressure.

Options :

1. ✔ downstream, rise
2. ✖ upstream, rise
3. ✖ upstream, fall
4. ✖ downstream, fall

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 24 Question Id : 63068067162 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The valves which are used to remove the sediment in the pipelines are called:

Options :

1. ✖ butterfly valves
2. ✔ scour valves
3. ✖ air valves
4. ✖ check valves

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 25 Question Id : 63068067165 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

To control the water hammer, which of the following valves will be used?

Options :

1. ✔ Air valves

2. ✖ Pilot valves
3. ✖ Scour valves
4. ✖ Blow off valves

Hints :

CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
CE_EnvEngg_SS_PSA_37 Items_TranslationTemplate-TM
Environmental Engineering, S.C. Sharma, Khanna Publishing House

Question Number : 26 Question Id : 63068068897 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In a water distribution system using circular system, the main pipe line will be_____.

Options :

1. ✖ in the centre of the city
2. ✖ at any one side of city
3. ✔ on the periphery of the city
4. ✖ anywhere in the city

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 554

Question Number : 27 Question Id : 63068068906 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The rugosity coefficient value used in the design of sewer lines depends on_____.

Options :

1. ✖ longitudinal gradient
2. ✖ hydraulic radius of pipe
3. ✔ material used in sewer pipe
4. ✖ cross sectional area of sewer pipe

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd.

Question Number : 28 Question Id : 63068068910 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following formulas is used to find Chezy's constant?

Options :

1. ✖ Ryve's equation
2. ✖ Hazen's equation
3. ✔ Bazin's equation
4. ✖ Continuity equation

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 49

Question Number : 29 Question Id : 63068068921 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

According to general standards for discharge of environmental pollutants part -A : effluents, the maximum chemical oxygen demand for effluents from inland surface water shall be_____

Options :

1. ✔ 250 mg/l
2. ✖ 300 mg/l
3. ✖ 350 mg/l
4. ✖ 500 mg/l

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
BIS standards for discharge of sewage and industrial effluents in surface water sources and public sewers

Question Number : 30 Question Id : 63068068922 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Sludge thickening will reduce the volume of sludge by_____ conditioning

Options :

1. ✔ physical
2. ✖ chemical
3. ✖ biological
4. ✖ physico-chemical

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 477

Question Number : 31 Question Id : 63068068923 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Fresh sludge has moisture content of 99%, and after thickening, its moisture content is reduced to 96%.The reduction in the volume of sludge is:

Options :

1. ✖ 197%
2. ✖ 5%
3. ✔ 75%
4. ✖ 3%

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 487

Question Number : 32 Question Id : 63068068925 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The two main gases liberated from an anaerobic sludge digestion tank would include:

Options :

1. ✖ NH_3 and CH_4
2. ✔ CO_2 and CH_4
3. ✖ CH_4 and Ne
4. ✖ NH_3 and CO_2

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 491

Question Number : 33 Question Id : 63068068926 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

On what media does the sludge drying bed work?

Options :

1. ✔ Sand
2. ✖ polypropylene membrane
3. ✖ Geotextile cloth
4. ✖ Plastic

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 506

Question Number : 34 Question Id : 63068068928 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

When carbon monoxide reacts with hemoglobin, it forms_____.

Options :

1. ✔ carboxy-haemoglobin
2. ✖ carbomino-haemoglobin
3. ✖ amino acid
4. ✖ carbon di oxide and hydrogen

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 611

Question Number : 35 Question Id : 63068068929 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Collection efficiency of an electrostatic precipitator ranges between _____for particles size between 0.1µm to 0.2µm.

Options :

1. ✖ 99.8% to 100%
2. ✔ 96% to 97%
3. ✖ 86% to 88%
4. ✖ 83% to 85%

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd.

Question Number : 36 Question Id : 63068068930 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The collection efficiency of an electrostatic precipitator under ideal conditions is generally estimated by using_____

Options :

1. ✖ Vander Waals equation
2. ✖ Dobson equation
3. ✔ Deutsch-Anderson equation
4. ✖ Schmutzdecke equation

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 641

Question Number : 37 Question Id : 63068068931 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A venture scrubber used to control air pollution is an example of_____.

Options :

1. ✖ dry scrubbers
2. ✔ wet scrubbers
3. ✖ gravity scrubbers
4. ✖ pressure scrubbers

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 642

Question Number : 38 Question Id : 63068068933 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following wastes is NOT generated from domestic processes?

Options :

1. ✖ Coconut shell
2. ✖ Food waste
3. ✖ Garden trimming
4. ✔ scrap lumber

Hints :

Environmental Engineering_Soumyajit _S Popli_reviewed_150 Qs_79 clean_48 Items_Translation Template
Dr. B C Punamia , Wastewater Engineering, Laxmi Publications Ltd. , I, 592

Question Number : 39 Question Id : 63068068975 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

When a retaining wall moves towards the backfill, the pressure exerted on the wall is termed as _____.

Options :

1. ✔ passive earth pressure
2. ✖ swelling pressure
3. ✖ pore pressure
4. ✖ active earth pressure

Hints :

ForReview_Civil- SS_SJ- Foundation -set 1 &2_16 Items_Translation Template
Dr.B C Punmia , Soil Mechanics and Foundations , Laxmi Publications Pvt Ltd ,16,512

Question Number : 40 Question Id : 63068068978 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following expression is correct according to Culmann's graphical method to find the angle (ψ) between earth pressure line and the slope line? Where, δ

is wall friction angle, and θ is inclination of back of wall to the vertical.

Options :

1. ✖ $\psi = 90° + \theta + \delta$
2. ✖ $\psi = 90° + \theta - \delta$
3. ✖ $\psi = 90° - \theta + \delta$
4. ✔ $\psi = 90° - \theta - \delta$

Hints :

ForReview_Civil- SS_SJ- Foundation -set 1 &2_16 Items_Translation Template
Dr.B C Punmia , Soil Mechanics and Foundations , Laxmi Publications Pvt Ltd ,16,562

Question Number : 41 Question Id : 63068068986 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The load carrying capacity of an individual friction pile is 200 kN. What is the total load carrying capacity of a group of nine such piles with a group efficiency factor of 0.8?

Options :

1. ✖ 1800 kN
2. ✖ 1640 kN
3. ✔ 1440 kN
4. ✖ 900 kN

Hints :

ForReview_Civil- SS_SJ- Foundation -set 1 &2_16 Items_Translation Template
Dr.B C Punmia , Soil Mechanics and Foundations , Laxmi Publications Pvt Ltd ,17,781

Question Number : 42 Question Id : 63068069225 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In the static cone penetration method, for calculation of settlement in cohesionless soils, _____.

Options :

1. ✔ the sand layer is divided into small layers such that each small layer has approximately constant value of the cone resistance
2. ✖ the sand layer is divided into small layers such that each small layer has different value of the cone resistance
3. ✖ the sand layer considered to be a single layer so that there is zero value of the cone resistance
4. ✖ the sand layer is divided into small layers of equal size such that each small layer undergoes same amount of settlement

Hints :

ForReview_Civil- SS_SJ- Foundation -set 1 &2_4 Clear_Translation Template_P1E2

Dr. K R ARORA
Soil Mechanics and Foundations
Standard publishers and distributors
16
616

Question Number : 43 Question Id : 63068069226 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The upward pressure developed by the soil on the bottom face of a footing is termed as_____.

Options :

1. ✖ surface tension
2. ✖ confining pressure
3. ✔ contact pressure
4. ✖ deviatoric pressure

Hints :

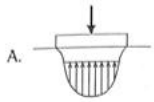
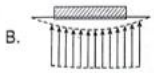
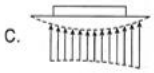
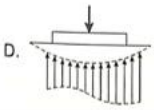
ForReview_Civil- SS_SJ- Foundation -set 1 &2_4 Clear_Translation Template_P1E2

Dr.B C Punmia
Soil Mechanics and Foundations
Laxmi Publications Pvt Ltd
17
650

Question Number : 44 Question Id : 63068069227 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Match the columns.

Contact pressure distribution diagrams	Description of footings
A. 	1. Rigid footing on cohesive soil
B. 	2. Flexible footing on cohesive soil
C. 	3. Rigid footing on cohesion-less soil at ground level
D. 	4. Flexible footing on cohesionless soil at ground level

Options :

1. ✖ A-3, B-1, C-4, D-2
2. ✖ A-4, B-3, C-2, D-1
3. ✔ A-3, B-2, C-4, D-1
4. ✖ A-4, B-1, C-3, D-2

Hints :

ForReview_Civil- SS_SJ- Foundation -set 1 &2_4 Clear_Translation Template_P1E2

Dr.B C Punmia
Soil Mechanics and Foundations
Laxmi Publications Pvt Ltd
17
650

Question Number : 45 Question Id : 63068069228 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In cohesive-frictional soils, to obtain safe load by Static Pile load formula, a factor of safety of _____ in compression and _____ in uplift are recommended respectively.

Options :

1. ✖ 1.5 ; 3
2. ✖ 3; 4.5
3. ✔ 2.5; 3
4. ✖ 3; 6

Hints :

ForReview_Civil- SS_SJ- Foundation -set 1 &2_4 Clear_Translation Template_P1E2

Dr. K R ARORA
Soil Mechanics and Foundations
Standard publishers and distributors
16
684

Question Number : 46 Question Id : 63068065594 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Match the following.

A. Topographical Survey	1. To survey for the features such as roads, railways, canals, towns, villages, etc.
B. Engineering Survey	2. For laying out plots and construction streets, water supply systems and sewers
C. Cadastral Survey	3. To determine quantities and for collection of data for roads, railways, reservoirs, sewerage, water supply schemes, etc.
D. City Survey	4. To locate the boundaries of fields, houses, etc.

Options :

1. ✔ A-1; B-3; C-4; D-2
2. ✖ A-1; B-2; C-3; D-4
3. ✖ A-4; B-3; C-2; D-1
4. ✖ A-1; B-4; C-3; D-2

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
3

Question Number : 47 Question Id : 63068065598 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is NOT an advantage of chain surveying?

Options :

1. ✖ It does not require costly equipment.
2. ✖ It is suitable for small areas with a fair degree of accuracy.
3. ✖ Computations and plotting are simple.
4. ✔ It is suitable for large and hilly areas.

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
36

Question Number : 48 Question Id : 63068065599 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is an advantage of chain surveying?

Options :

1. ✖ It is suitable for large areas because chaining for large areas is simple.
2. ✖ It is suitable for undulated areas.
3. ✔ It is suitable for small areas with a fair degree of accuracy.
4. ✖ Results are always accurate.

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
36

Question Number : 49 Question Id : 63068065600 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The principle of compass surveying is_____.

Options :

1. ✖ direct and indirect ranging

2. ✖ triangulation
3. ✔ traversing
4. ✖ chaining

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
109

Question Number : 50 Question Id : 63068065602 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

If the bearing of line PQ is N65° 35’ 00”E and the deflection angle (clockwise) between the lines PQ and QR is 34° 45’ 00”, then the bearing of line QR is:

Options :

1. ✖ N30° 50’E
2. ✖ N34° 45’E
3. ✔ S79° 40’E
4. ✖ N10° 20’E

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
108

Question Number : 51 Question Id : 63068065603 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify the INCORRECT statement about magnetic dip.

Options :

1. ✔ The horizontal angle made by the magnetic needle with vertical is known as dip of the needle.
2. ✖ Angle of dip varies from 0° at the equator to 90° at the magnetic poles.
3. ✖ The value of dip varies from place to place.
4. ✖ Dip angle increases as we go from the equator to the poles.

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
113

Question Number : 52 Question Id : 63068065604 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The variation in which magnetic meridian swings like a pendulum is known as _____.

Options :

1. ✖ irregular variation
2. ✖ annual variation
3. ✔ secular variation
4. ✖ diurnal variation

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
123

Question Number : 53 Question Id : 63068065605 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Select the option that is correct regarding the following two statements.
Statement 1: Local attraction at any station is detected by observing the fore bearing and the back bearing of the line.
Statement 2: If the difference between FB and BB is 180°, both the end stations are considered to be free from local attraction.

Options :

1. ✔ Both Statement 1 and Statement 2 are individually true and Statement 2 is the correct explanation of Statement 1.
2. ✖ Both Statement 1 and Statement 2 are individually true, but Statement 2 is not the correct explanation of Statement 1.
3. ✖ Statement 1 is true, but Statement 2 is false.
4. ✖ Statement 1 is false, but Statement 2 is true.

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
125

Question Number : 54 Question Id : 63068065607 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Given are the bearings of the lines of an open traverse. Correct the bearings by finding local attraction at the affected stations.

PQ: 36° 00’	QP: 216° 45’
QR: 98° 15’	RQ: 276° 00’
RS: 201° 45’	SR: 23° 15’
SP: 322° 45’	PS: 142° 45’

Options :

1. ✖ QP: 215° 00’; QR: 87° 30’; RQ: 276° 30’; RS: 201° 15’
2. ✖ QP: 216° 10’; QR: 93° 50’; RQ: 287° 10’; RS: 208° 45’
3. ✖ QP: 210° 30’; QR: 76° 50’; RQ: 217° 20’; RS: 210° 15’
4. ✔ QP: 216° 00’; QR: 97° 30’; RQ: 277° 30’; RS: 203° 15’

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
123

Question Number : 55 Question Id : 63068065623 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The tangential method of tacheometery uses:

Options :

1. ✖ the readings against the top and bottom cross-hairs only
2. ✔ the readings against the middle cross-hair only
3. ✖ a constant intercept on the staff
4. ✖ the readings against all the three cross-hairs

Hints :

CivilEngg_Geomatics Engineering_SM_SM_30 Items_TranslationTemplate_TM
Dr.B C Punmia
Surveying I
Lakshmi Publications(P)Ltd
16
430

Question Number : 56 Question Id : 63068066201 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The line joining points of equal depths of evapotranspiration is _____.

Options :

1. ✖ isohyets
2. ✖ isopluvial
3. ✔ isopleth
4. ✖ isothermal

Hints :

CE_Hydrology_BG_AKK_22 Items_Translation Template-TM
The line joining of equal depths of evapotranspiration on maps are called Isopleths
K Subramanya

Engineering hydrology
McGraw Hill Education Private Limited
4, 93

Question Number : 57 Question Id : 63068066206 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The daily flows of a river have 1050 data points, and the number of days the flow being equal to or greater than its class value is 205. Find the percentage probability of the flow magnitude being equalled or exceeded.

Options :

1. ✖ 0.15
2. ✔ 0.195
3. ✖ 0.255
4. ✖ 0.295

Hints :

CE_Hydrology_BG_AKK_22 Items_Translation Template-TM

$$N = 1050$$
$$M = 6$$
$$P_p = \frac{m}{N+1} * 100\%$$
$$= \frac{205}{1050+1} * 100 = 19.5\%$$

K Subramanya
Engineering hydrology
McGraw Hill Education Private Limited
4, 165

Question Number : 58 Question Id : 63068066212 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is the Aridity Index (AI)?
PET = Potential evapotranspiration
AET = Actual evapotranspiration

Options :

1. ✖ $\frac{AET-PET}{AET} \times 100$
2. ✖ $\frac{PET-AET}{AET} \times 100$
3. ✖ $\frac{AET-PET}{PET} \times 100$
4. ✔ $\frac{PET-AET}{PET} \times 100$

Hints :

CE_Hydrology_BG_AKK_22 Items_Translation Template-TM

$$\text{Aridity index} = \frac{PET-AET}{PET} * 100$$

K Subramanya
Engineering hydrology
McGraw Hill Education Private Limited
4, 212

Question Number : 59 Question Id : 63068066214 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The daily discharge of the stream is given in the table. Find the percentage probability of the flow for the discharge 18 m^3/s.

Class interval	5	6	10	2	3
Discharge m^3/s	15	25	32	18	12

Options :

1. ✖ 30.33%
2. ✖ 22.33%
3. ✖ 29.49%
4. ✔ 33.33%

Hints :

CE_Hydrology_BG_AKK_22 Items_Translation Template-TM

$N = 5$

$M = 2$

$P_p = \frac{m}{N+1} * 100\%$

$= \frac{2}{5+1} * 100 = 33.3\%$

K Subramanya
Engineering hydrology
McGraw Hill Education Private Limited
4, 165

Question Number : 60 Question Id : 63068066568 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The precipitation falling directly over the streams is called:

Options :

1. ✔ channel precipitation
2. ✖ throughfall
3. ✖ interception
4. ✖ runoff

Hints :

CE_Hydrology_BG_AKK_37 Items_TranslationTemplate - TM
The precipitation directly falls on stream, channels or rivers are called channel precipitation.
Jaya Rami Reddy
Hydrology
Laxmi publications Pvt. Ltd., 3, 4

Question Number : 61 Question Id : 63068066570 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In the chart of weighing bucket rain gauge, the pen had reversed its path of travel at 4 hours of the next day after recording 100 mm of rainfall and the rainfall recorded in the next day at next two hours is 50 mm, then the cumulative rainfall recorded by gauge at say 6 hours of the next day is:

Options :

1. ✔ 150 mm
2. ✖ 50 mm
3. ✖ 200 mm
4. ✖ 100 mm

Hints :

CE_Hydrology_BG_AKK_37 Items_TranslationTemplate - TM
100 mm + 50 mm = 150 mm
Jaya Rami Reddy

Hydrology
Laxmi publications Pvt. Ltd., 3, 95

Question Number : 62 Question Id : 63068066578 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Rate of transpiration depends upon the:

Options :

1. ✖ base period of the plant
2. ✖ harvesting period of the plant
3. ✔ Atmospheric humidity and wind
4. ✖ sowing period of the plant

Hints :

CE_Hydrology_BG_AKK_37 Items_TranslationTemplate - TM
Rate of transpiration depends upon the growth period of plant
K Subramanya
Engineering hydrology
McGraw Hill Education Private Limited, 4, 84

Question Number : 63 Question Id : 63068066584 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Match the characteristics of catchment.

1.	Stream density	A.	Elevation difference between the catchment outlet and the highest point on the basin perimeter
2.	Drainage density	B.	Ratio of number of streams of all orders to the area of basin
3.	Relief	C.	Ratio of total length of streams of all orders within the basin to the area of basin
		D.	Reflecting the pattern of branches that unite to form the trunk stream

Options :

1. ✖ 1 - A, 2 - B, 3 - C
2. ✖ 1 - A, 2 - D, 3 - C
3. ✖ 1 - B, 2 - D, 3 - A
4. ✔ 1 - B, 2 - C, 3 - A

Hints :

CE_Hydrology_BG_AKK_37 Items_TranslationTemplate - TM
Stream density - Ratio of number of streams of all orders to the area of basin.
Drainage density - Ratio of total length of streams of all orders within the basin to its area.
Relief - Elevation difference between the catchment outlet and the highest point on the basin perimeter
K Subramanya
Engineering hydrology
McGraw Hill Education Private Limited, 4, 170

Question Number : 64 Question Id : 63068066585 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Two channels of order 2 and order 3 joined together produces an order of which of the following streams?

Options :

1. ✔ 3rd order
2. ✖ 2nd order
3. ✖ 1st order
4. ✖ 5th order

Hints :

CE_Hydrology_BG_AKK_37 Items_TranslationTemplate - TM
Two channels of order 2 and order 3 joined together produces an order of 3rd order streambr>K Subramanya
Engineering hydrology
McGraw Hill Education Private Limited, 4, 170

Question Number : 65 Question Id : 63068065586 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1

What is the average value of duty for crop rice in India?

Options :

1. ✔ 775 hectares/cumec
2. ✖ 1000 hectares/cumec
3. ✖ 1500 hectares/cumec
4. ✖ 1275 hectares/cumec

Hints :

CE_IrrigationEngg_BG_AY_17 Items_TranslationTemplate - TMThe average value of duty for Rice is 775 hectare/cumecbr>Santosh Kumar Garg
IrrigationEngineering & Hydraulics Structures
Khanna Publishers, 19th, 25

Question Number : 66 Question Id : 63068065587 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A canal commands an irrigated area of 500 hectares. The intensity of irrigation of paddy in this area is 50%. The transplantation of paddy requires 30 days and total depth of water required by the paddy is 50cm on the field during transplantation. The available water during transplantation on the field is 15 cm. Calculate the duty of water , on the field for the given details.

Options :

1. ✖ 730.5 hectares/cumec
2. ✖ 750 hectares/cumec
3. ✔ 740.5 hectares/cumec
4. ✖ 745.5 hectares/cumec

Hints :

CE_IrrigationEngg_BG_AY_17 Items_TranslationTemplate - TMΔ = 8.64 B/D
Here B= Transplantation period = 30 days
Δ= Depth of water actually applied in the field = 50-15= 35 cm =0.35 m
D = (8.64 x B)/ Δ = 740.57 hectares/cumec
Dr B C Punmia
Irrigation and Water power engineering
Laxmi publications, 16th edition, 67

Question Number : 67 Question Id : 63068065672 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following soil group has excellent workability as construction material?

Options :

1. ✖ SC
2. ✖ GM
3. ✖ SM
4. ✔ GW

Hints :

IC_Eng_CE_SoilMech_BS(Grad)_SM_SMB_15 Items_Translation Template_TM
Dr.B C Punmia
Soil mechanics and foundation engineering
Laxmi publication Ptv Ltd
17
128

Question Number : 68 Question Id : 63068066627 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A soil having Specific gravity 'G' equal to 2.66 has a theoretical maximum dry density of 1.865 g/cm^3 which corresponds to zero air voids at the OMC. Calculate the corresponding dry unit weight, if the density of water (ρw) = 1 g/ cm^3.

Options :

1. ✔ 18.29 kN/m^3
2. ✖ 21.56 kN/m^3
3. ✖ 22.78 kN/m^3
4. ✖ 24.79 kN/m^3

Hints :

CivilEngg_Soil Mechanics_SK_AKY_16 Items_Translation Template_TM
Dr. B.C. Punmia et al.,
Soil Mechanics & Foundations
Laxmi Publications (P) LTD
16th Edition
419 &420
$\rho_d = G\rho_w / (1 + wG) = 2.66 \times 1 / (1 + 0.16 \times 2.66) = 1.865$ g/ cm^3 , Dry unit weight = 9.81 x ρ_d = 9.81 x 1.865 = 18.29 KN/ m^3

Question Number : 69 Question Id : 63068066630 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A granular soil is subjected to major and minor principal stress of 8 MN/m^2 and 2 MN/m^2, respectively. What will be the radius of Mohr's circle?

Options :

1. ✖ 6 MN/m^2
2. ✔ 3 MN/m^2
3. ✖ 4 MN/m^2
4. ✖ 10 MN/m^2

Hints :

CivilEngg_Soil Mechanics_SK_AKY_16 Items_Translation Template_TM
radius of Mohr's circle = (8-2)/2 =3mn/M^2

Question Number : 70 Question Id : 63068066639 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Determine the unconfined compressive strength of normally consolidated deposit of clay, if the effective stress at a depth of 15 m is 180 kN/m^2, plasticity index of the clay is 75% and the undrained cohesion value of clay equal to 69.75 kN/m^2.

Options :

1. ✖ 34.87 kN/m^2
2. ✔ 139.5 kN/m^2
3. ✖ 69.75 kN/m^2
4. ✖ 208.35 kN/m^2

Hints :

CivilEngg_Soil Mechanics_SK_AKY_16 Items_Translation Template_TM
Dr. B.C. Punmia et al.,
Soil Mechanics & Foundations
Laxmi Publications (P) LTD
17th Edition
481
σ = 180 kN/m2. ,PI = 75%, Cu / σ = 0.11 + 0.0037 PI, Cu = 69.75 kN/m2.,unconfined compressive strength ,qu = 2 x Cu = 2 x 69.75 = 139.5 kN/m2

Question Number : 71 Question Id : 63068066641 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A dry sand specimen was tested in a triaxial machine with the cell pressure of 50 kPa. If the deviator stress at failure was 100 kPa, calculate the major principal stress at failure.

Options :

1. ✖ 100 kPa
2. ✔ 150 kPa
3. ✖ 50 kPa
4. ✖ 500 kPa

Hints :

CivilEngg_Soil Mechanics_SK_AKY_16 Items_Translation Template_TM
Dr. B.C. Punmia et al.,
Soil Mechanics & Foundations
Laxmi Publications (P) LTD
17th Edition
471
σ d = 100 kPa, σ 3 = 50 kPa,σ d =σ 1 - σ 3,σ 1 = 100+50 = 150 kPa

Question Number : 72 Question Id : 63068066642 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

During a triaxial test, the cell pressure is increased from 0.1 N/mm^2 to 0.25 N/mm^2 and the pore water pressure increases from 0.05 N/mm^2 to 0.15 N/mm^2. Calculate the Skempton's pore pressure parameter B.

Options :

1. ✖ $\frac{1}{3}$
2. ✖ $-\frac{1}{3}$

3. ✖ $-\frac{2}{3}$

4. ✔ $\frac{2}{3}$

Hints :
CivilEngg_Soil Mechanics_SK_AKY_16 Items_Translation Template_TM
Dr. B.C. Punmia et al.,
Soil Mechanics & Foundations
Laxmi Publications (P) LTD
17th Edition
477
Deviator pressure , σ d =σ 1 - σ 3, B = ΔUc/ Δσ3 = (0.15-0.05) / (0.25 – 0.1) =2/3

Question Number : 73 Question Id : 63068068955 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following expression is correct to calculate permissible stresses used in working stress method of design?

Options :

1. ✖ Permissible Stress = Yield Stress × Factor of Safety
2. ✔ Permissible Stress = Yield Stress / Factor of Safety
3. ✖ Yield Stress = Permissible Stress / Factor of Safety
4. ✖ Permissible Stress = Yield Stress - Factor of Safety

Hints :
Civil Engg - Steel Structure - AS_SK_16 Clear_Translation Template_P1E1
Author:NPTEL, Page No - 5
Steel Structure Design , Dr. BC Punimia, Laxmi Publication

Question Number : 74 Question Id : 63068068956 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following does NOT belong to the limit state of strength?

Options :

1. ✖ Fracture due to fatigue
2. ✖ Brittle fracture
3. ✖ Rupture of the structure
4. ✔ Vibrations in structures

Hints :
Civil Engg - Steel Structure - AS_SK_16 Clear_Translation Template_P1E1
IS 800, 2007 , 28
Steel Structure Design , Dr. BC Punimia, Laxmi Publication

Question Number : 75 Question Id : 63068068957 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS 800:2007, The thickness of the lacing bar for single lacing should not be less than _____of its effective length.

Options :

1. ✖ $\frac{1}{30}$

2. ✔ $\frac{1}{40}$

3. ✖ $\frac{1}{50}$

4. ✖ $\frac{1}{60}$

Hints :
Civil Engg - Steel Structure - AS_SK_16 Clear_Translation Template_P1E1
IS 800, 2007,50
Steel Structure Design , Dr. BC Punimia, Laxmi Publication

Question Number : 76 Question Id : 63068068960 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1

Which ofthe following is NOT a type of bolted joint?

Options :

1. ✖ Lap joint
2. ✖ Single cover butt joint
3. ✔ Double cover lap joint
4. ✖ Double cover butt joint

Hints :

Civil Engg - Steel Structure - AS_SK_16 Clear_Translation Template_P1E1
Duggal , Limit state design of steel structures , Mc Graw Hill Education, 2nd, 168
Steel Structure Design , Dr. BC Punimia, Laxmi Publication

Question Number : 77 Question Id : 63068068962 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In lightly stressed structures, where stiffness, rather than strength, controls the design and fatigue or brittle fracture is not a problem, the _____ welds are entirely adequate and generally more economical.

Options :

1. ✔ fillet
2. ✖ butt
3. ✖ plug
4. ✖ slot

Hints :

Civil Engg - Steel Structure - AS_SK_16 Clear_Translation Template_P1E1
https://www.google.co.in/books/edition/_/qo7vAwAAQBAJ?hl=en&gbpv=1&pg=PA223&dq=In+lightly+stressed+structures+where+stiffness+rather+than+strength+controls+design+and+fatigue+or+brittle+fracture+is+not+a+pro
223
Steel Structure Design , Dr. BC Punimia, Laxmi Publication

Question Number : 78 Question Id : 63068068963 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The reduction in the weld strength as per long joint is done when the length of the welded joint of a splice or end connections in a compression or tension element exceeds _____ times the throat size of the weld.

Options :

1. ✖ 16
2. ✔ 150
3. ✖ 100
4. ✖ 120

Hints :

Civil Engg - Steel Structure - AS_SK_16 Clear_Translation Template_P1E1
IS 800:2007, 79
Steel Structure Design , Dr. BC Punimia, Laxmi Publication

Question Number : 79 Question Id : 63068068970 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following causes fatigue in a structure?
1. Stress due to self-weight
2. Residual stress
3. Large number of loading cycles
4. Wide range of stress variation

Options :

1. ✖ 1 and 2
2. ✔ 3 and 4
3. ✖ 2, 3 and 4
4. ✖ 1, 2 and 4

Hints :

Civil Engg - Steel Structure - AS_SK_16 Clear_Translation Template_P1E1
IS 800, 2007,91
Steel Structure Design , Dr. BC Punimia, Laxmi Publication

Question Number : 80 Question Id : 63068069845 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A metal specimen having a diameter of 20 mm is tested in universal testing machine. It was found that the strain in longitudinal, lateral direction was 4.5×10^{-4} and

$1.5x10^{-4}$ respectively. What will be its fraction of Poisson's?

Options :

1. ✔ 0.33
2. ✖ 0.30
3. ✖ 0.25
4. ✖ 0.5

Hints :

IR_ME+CE_StrengthOfMat_WUHA_IK Solved_63 Clean_Translation Template_P1E1-TM

$$\text{Poisson ratio } \mu = \frac{-\frac{\delta d}{d}}{\frac{\delta L}{L}} = \frac{\frac{-0.0045}{20}}{\frac{0.09}{200}} = 0 \cdot 33$$

R.K Bansal, Strength of material,S.chand ,4

Question Number : 81 Question Id : 63068069849 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify the correct statement with respect to the materials used in steel reinforced cement concrete structures

Options :

1. ✖ Cement concrete has poor compressive strength when compare to its tensile strength
2. ✖ Steel is weak in compression
3. ✔ Steel has a good tensile strength
4. ✖ Cement concrete has good tensile strength when compared to steel

Hints :

IR_ME+CE_StrengthOfMat_WUHA_IK Solved_63 Clean_Translation Template_P1E1-TM

Concrete is weak in tension so in structural concrete steel bars are used because it is having good tensile strength.Sadhu Singh,Strenght of materials,Khanna Publishers,11

Question Number : 82 Question Id : 63068069850 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Let us consider two bars made of materials 'X' and 'Y'. The area of cross-section and length is the same for both materials. The free elongation produced by material 'X' and 'Y', individually, when subjected to a rise in temperature 'T' is 35mm and 45mm.If both the bars are combined to form a compound bar and are subjected to a rise in temperature T1, the stresses setup within the material 'X' and 'Y' are:

Options :

1. ✔ tensile, compressive
2. ✖ tensile, tensile
3. ✖ compressive, compressive
4. ✖ compressive, tensile

Hints :

IR_ME+CE_StrengthOfMat_WUHA_IK Solved_63 Clean_Translation Template_P1E1-TM

The free expansion of material "X" is 35mm where as for material "Y" is 45mm which indicates that thermal coefficient of expansion of material "Y" is greater than "X". So material "Y" suffers compressive stress and material "X" suffers tensile stress Sadhu Singh,Strenght of materials,Khanna Publishers,11

Question Number : 83 Question Id : 63068069894 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

At a location in a simply supported beam, the variation in the bending moment is given by $50x - 10x^2$ kN - m. The shear force at x=2 is _____ kN.

Options :

1. ✖ 20
2. ✖ 30
3. ✔ 10
4. ✖ 40

Hints :

IR_ME+CE_StrengthOfMat_WUHA_IK Solved_63 Clean_Translation Template_P1E1-TM

$$\text{Shear Force} = \frac{d(Bending\ Moment)}{dx}$$

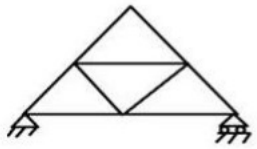
$$\text{SF} == \frac{d(50x - 10x^2)}{dx} = 50 - 20x = 50 - (20 \times 2) = 10KN$$

Sadhu Singh,Strenght of materials,Khanna Publishers,11

Question Number : 84 Question Id : 63068066591 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Calculate the degree of external satic indeterminacy for the plane truss shown in figure.



Options :

1. ✔ 0
2. ✖ -1
3. ✖ 1
4. ✖ 3

Hints :

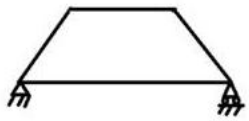
CE_StructuralAnalysis_SFS_QH_42 Items_TranslationTemplate-TM
Degree of static indeterminacy/ External Indeterminacy = 3-3=0
External Indeterminacy = 0
D S PRAKASH
STRUCTURAL ANALYSIS
UNIVERSITIES PRESS, 2016, 18

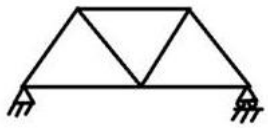
Question Number : 85 Question Id : 63068066597 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

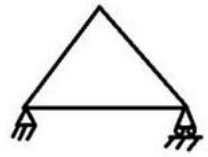
Correct Marks : 1

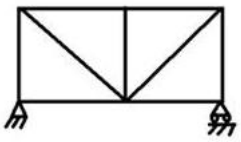
Identify the deficient truss from the following figures.

Options :

1. ✔ 

2. ✖ 

3. ✖ 

4. ✖ 

Hints :

CE_StructuralAnalysis_SFS_QH_42 Items_TranslationTemplate-TM
M=4, J=4
M=2j-r
= 8-3
4<5
The number of members are less than the required numbers
C S REDDY
BASIC STRUCTURAL ANALYSIS
Tata Mcgraw hill education pvt ltd, 2nd, 49

Question Number : 86 Question Id : 63068066606 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The horizontal thrust in a cable structure is/will_____.

Options :

1. ✖ always zero
2. ✔ decrease when there is increase in temperature
3. ✖ decrease when there is decrease in temperature
4. ✖ independent of temperature

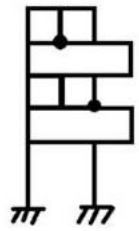
Hints :

CE_StructuralAnalysis_SFS_QH_42 Items_TranslationTemplate-TM
As the temperature increases the horizontal thrust on the cable decreases
SS Bhavikatti
Structural Analysis I
Vikas Publishing house, 4th, 227

Question Number : 87 Question Id : 63068066613 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Calculate the degree of external static indeterminacy for the given framed structure.



Options :

1. ✖ 2
2. ✖ -1
3. ✖ 0
4. ✔ 1

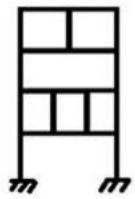
Hints :

CE_StructuralAnalysis_SFS_QH_42 Items_TranslationTemplate-TM
DSI(External)=Total Number of Reactions – (Equations available)
=6-5=1
Degree of External Static Indeterminacy = 1
D S PRAKASH
STRUCTURAL ANALYSIS
UNIVERSITIES PRESS, 5th, 24

Question Number : 88 Question Id : 63068066614 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Calculate the internal static indeterminacy for the given plane frame shown in figure.



Options :

1. ✔ 18
2. ✖ 3
3. ✖ 0
4. ✖ 1

Hints :

CE_StructuralAnalysis_SFS_QH_42 Items_TranslationTemplate-TM
Internal Static Indeterminacy can be calculated by
=3*Number of loops
=3*6=18
D S PRAKASH
STRUCTURAL ANALYSIS
UNIVERSITIES PRESS, 5th, 16

Question Number : 89 Question Id : 63068065646 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following statement is incorrect with respect to design considerations for taxiway layout?

Options :

1. ✖ As far as possible, the intersection of the taxiway and runway should be avoided.
2. ✔ Exit taxiways are always placed at right angles to the runways.
3. ✖ The route for the taxiway selected should provide the shortest practicable distance from the apron to the runway end.
4. ✖ Taxiways should be arranged so that aircraft taxiing towards the apron do not interfere with the aircraft taxiing for take-off.

Hints :

CE_Transportation Engg_SMB_UCS_41 Items_TranslationTemplate
The following factors controlling taxiway layout
1.As far as possible , the intersection of taxiway and runway should be avoided 2.The route for taxiway selected should provide the shortest practicable distance from the apron to the runway end ,Taxiways should be arranged so that aircraft taxiing towards the apron do not interfere with the aircrafts taxiing for take off
S.k.khanna M.g.arora S.s.jain, Airport planning and design, Nem chand and bros,Fifth edition, 226

Question Number : 90 Question Id : 63068065647 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The main function of taxiways is to provide access from the runways to the terminal area and service hangers.

Which of the following statements related to the length of a taxiway is/are true or false?
1: Taxiway length depends upon the distance between the apron and entry end or exit end of the runway.
2:To save fuel consumption, the length of the taxiway should be as short as practicable.

Options :

1. ✖ 1 is true but 2 is false
2. ✔ Both the statements are true
3. ✖ 1 is false but 2 is true
4. ✖ Both the statements are false

Hints :

CE_Transportation Engg_SMB_UCS_41 Items_TranslationTemplate
Identify the correct statement/s related to length of a taxiway
Statement 1: Taxiway length depends upon the distance between the apron and entry end or exit end of the runway
Statement 2:To save fuel consumption the length of taxiway should be as short as practicable ,Both statements are true
Rangwala, Airport Engineering, Charotor publishing house Pvt Ltd, 15th, 99-100

Question Number : 91 Question Id : 63068065648 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The function of exit taxiways is to minimise the runway occupancy by the landing aircraft. The location of exit taxiways does NOT depend on _____.

Options :

1. ✖ Touchdown speed
2. ✖ Mix of aircrafts
3. ✔ Size of apron
4. ✖ Rate of deceleration of aircrafts

Hints :

CE_Transportation Engg_SMB_UCS_41 Items_TranslationTemplate
Factors influences location of exit taxiway 1. Aircraft traffic control, 2. Exit speed, 3. Location of runway,4. Number of exits, 5.Topographical features, 6.Types of aircraft, 7. Weather conditions, 8. Pilot variability
Rangwala, Airport Engineering, Charotor publishing house Pvt Ltd, 15th, 105

Question Number : 92 Question Id : 63068065650 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The aircraft are berthed on the aprons before they are loaded and unloaded. Hence, the loading apron is also known as the_____.

Options :

1. ✖ landing apron
2. ✔ parking apron
3. ✖ service apron
4. ✖ hangar

Hints :

CE_Transportation Engg_SMB_UCS_41 Items_TranslationTemplate
The aeroplanes are berthed on the aprons before they are loaded and unloaded. Hence , the loading apron is also known as the Parking apron
Rangwala, Airport Engineering, Charotor publishing house Pvt Ltd, 15th, 109

Question Number : 93 Question Id : 63068065651 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The relatively small aprons placed at a convenient location in the airport for the temporary storage of the aircraft is called _____.

Options :

1. ✖ the loading apron

2. ✖ the holding apron
3. ✔ the holding bay
4. ✖ the parking apron

Hints :

CE_Transportation Engg_SMB_UCS_41 Items_TranslationTemplate
The relatively small aprons placed at a convenient location in the airport for the temporary storage of the aircraft is called as Holding bays
Rangwala, Airport Engineering, Charotor publishing house Pvt Ltd, 15th, 110-111

Question Number : 94 Question Id : 63068066535 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In the case of flexible pavements, ineffective road surface drainage system is mainly due to:

Options :

1. ✖ reduced thickness of wearing coat
2. ✖ poor quality of subgrade soil
3. ✖ Poor compaction of pavement layers
4. ✔ Inadequate cross slope of pavement surface as well as longitudinal slope of the roadside drains

Hints :

CE_Transportation Engg_SMB_UCS_15 Items_Translation Template-TM
In case of flexible pavements, ineffective road surface drainage system is mainly due to inadequate cross slope of the pavement surface or shoulders
Inadequate longitudinal slope of the road side drains
S.K Khanna, C.E.G Justo, A Veeraragavan
Highway Engineering
Nem Chand & Bro, Civil lines, Roorkee 247 667, India
Tenth

Question Number : 95 Question Id : 63068066536 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Holes of 30 to 50 mm diameter are drilled through the CC pavement slab at a spacing of 1.5 to 3m. The sand-cement slurry is grouted under high pressure through these holes until the gaps under the slabs are filled up and the cracked slab starts lifting. This process is called _____.

Options :

1. ✖ mud pumping
2. ✔ mud jacking
3. ✖ scaling
4. ✖ Ravelling

Hints :

CE_Transportation Engg_SMB_UCS_15 Items_Translation Template-TM
The holes of 30 to 50 mm diameter are drilled through the CC pavement slab at a spacing of 1.5 to 3m. Sand – cement slurry grouted under high pressure through these holes until the gaps under the slabs are filled up and cracked slab starts lifting up. The process in called as Mud jacking
S.K Khanna, C.E.G Justo, A Veeraragavan
Highway Engineering
Nem Chand & Bro, Civil lines, Roorkee 247 667, India
Tenth
675

Question Number : 96 Question Id : 63068066539 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The turning zone is the area of the airport other than the approach area and it is intended for turning operations of the aircraft in case of emergencies like the failure of engine or trouble in the smooth working of aircraft experienced at the start of the take-off.
Which of the following statements related to the turning zone of the aircraft is/are true or false?
1. Any object located within a distance of 4.5 km from the airport reference point is considered as an obstruction, if its height exceeds 51 m above the ground or the established airport elevation, whichever is more.
2. An aircraft operates at a higher height in the turning zone, so it is necessary to ascertain the fact that the area of the turning zone should be free from any obstructions.

Options :

1. ✔ 1 is true but 2 is false
2. ✖ Both the statements are true
3. ✖ 1 is false but 2 is true
4. ✖ Both the statements are false

Hints :

CE_Transportation Engg_SMB_UCS_15 Items_Translation Template-TM
2nd Statement is incorrect, aircraft operates at a considerably low height in the turning zone
Rangwala
Airport Engineering
Charotor publishing house Pvt Ltd
5th, 62

Question Number : 97 Question Id : 63068066541 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0
Correct Marks : 1

The runway is usually oriented in the direction of the prevailing winds. The orientation of a runway is selected after a careful analysis of wind velocity and direction and duration over the past years.
Match the wind directions used in runway orientation with the definition.

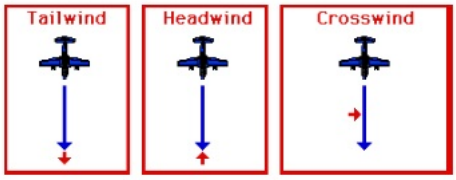
Wind direction	Definition
A. Headwind	1. It acts in the perpendicular direction of aircraft
B. Tailwind	2. It acts in the opposite direction of the head of the aircraft
C. Crosswind	3. It acts in the direction of the landing operation

Options :

1. ✖ A- 1, B -2, C - 3
2. ✖ A-2, B -1, C -3
3. ✖ A-3, B -2, C -1
4. ✔ A-2, B -3, C -1

Hints :

CE_Transportation Engg_SMB_UCS_15 Items_Translation Template-TM



Wind direction

Head wind: wind acts in the opposite-direction of the head of the aircraft

Tail wind: wind acts in the direction of landing operation

Cross wind: Wind acts in the perpendicular direction of aircraft

K. P. Subramanian
Highway railway airport and harbour Engineering
SCITECH Publications (INDIA) PVT LTD
2nd, 8.21 and 8.22

Question Number : 98 Question Id : 63068066542 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The ideal orientation of the runway decided from the study of the wind rose diagram may have to be altered or changed because of the following factors.
1. The orientation of the runway demands excessive grading and earthwork.
2. The location of the runway does not create excessive noise nuisance to the surrounding residential areas and public places of importance.
Which of the following statements is/are true or false?

Options :

1. ✖ Both the statements are true
2. ✖ 1 is false but 2 is true
3. ✔ 1 is true but 2 is false
4. ✖ Both the statements are false

Hints :

CE_Transportation Engg_SMB_UCS_15 Items_Translation Template-TM
2nd statement is incorrect (The location of runway which creates excessive noise nuisance to the surrounding residential areas and public places of importance)
Rangwala
Airport Engineering
Charotor publishing house Pvt Ltd
5th, 78

Question Number : 99 Question Id : 63068066543 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is an INCORRECT assumption in calculating the basic runway length?

Options :

1. ✖ The airport is at sea level.
2. ✖ No wind is blowing on the runway.
3. ✔ The runway has a slope in the longitudinal direction.
4. ✖ The en-route temperature is standard.

Hints :

CE_Transportation Engg_SMB_UCS_15 Items_Translation Template-TM
Assumptions made in calculation of basic length of runway are
1. Airport is at sea level
2. No wind is blowing on runway
Enroute temperature is standard
Made Easy
Railway, Airport, Dock, Harbour and Tunneling Engineering
Made Easy Publications, Fourth edition:2018, 115

Question Number : 100 Question Id : 63068066544 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Given the following aircraft class, mix and average gate occupancy time,

the capacity of 10 gates that serve the three classes of aircraft is:

Aircraft class	Mix(%)	Average occupancy time (min)
1	15	20
2	30	40
3	55	60

Assume that each gate is available for all aircraft.

Options :

1. ✖ 18 aircrafts/hour
2. ✖ 22 aircrafts /hour
3. ✔ 12.5 aircrafts /hour
4. ✖ 5.5 aircrafts/hour

Hints :

CE_Transportation Engg_SMB_UCS_15 Items_Translation Template-TM
Assume that each gate s available for all aircraft.
The gate capacity of a single gate is given by
c = 1/weighted service time
c = 1/ (0.15X20+0.30x40+0.55x60) =0.02 aircraft/min/gate
If G=Total number of gates, C = G x c = 10 x 0.02 = 0.2 aircraft/min or
12 aircraft/hr
Norman J. Ashford, Saleh A. Mumayiz, and Paul H. Wright
AIRPORT ENGINEERING
John Wiley and sons
4th edition, 265

Question Number : 101 Question Id : 63068074885 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per Environment (Protection) Rules, 1986, following the general standards for discharge of environmental pollutants part-A : effluents, in the case of disposal to inland surface water, the temperature of disposing effluent water shall NOT exceed _____ above the receiving water temperature.

Options :

1. ✔ 5°C
2. ✖ 10°C
3. ✖ 15°C
4. ✖ 20°C

Question Number : 102 Question Id : 63068074886 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Read the given statements related to secondary treatment of wastewater and identify whether they are correct or incorrect.
Statements:
A) Secondary treatment of wastewater can be achieved by chemical unit processes such as chemical oxidation, coagulation-flocculation and sedimentation and chemical precipitation.
B) Secondary treatment of wastewater cannot be achieved by employing biological processes (aerobic) where bacteria is used as a catalyst for removal of pollutant.

Options :

1. ✖ Statement A is correct but B is incorrect

2. ✖ Statement B is correct but A is incorrect
3. ✔ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 103 Question Id : 63068074887 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The term 'Sludge Volume Index' (SVI), used for the determination of sludge settleability is defined as:

Options :

1. ✔ volume occupied in ml by one gram of solids in the mixed liquor after settling for 30 min
2. ✖ volume occupied in ml by one gram of solids in the mixed liquor after settling for 150 min
3. ✖ percentage decrease in the volume of sludge after secondary treatment of waste water
4. ✖ mass of sludge occupied in 1 ml of mixed liquor after settling for 150 min

Question Number : 104 Question Id : 63068074888 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Read the given statements related to biological treatment of waste water and identify whether they are correct or incorrect.
Statements:
A) The objective of the biological treatment of wastewater is NOT to remove nutrients such as nitrogen and phosphorous from the wastewater.
B) The objective of the biological treatment of wastewater is to remove organic matter from the wastewater, which is present in soluble and colloidal form.

Options :

1. ✖ Statement A is correct but B is incorrect
2. ✔ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 105 Question Id : 63068074889 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to Noise Exposure Forecast (NEF) are correct or incorrect.
Statements:
A) NEF develops a noise contour diagram.
B) NEF is associated with road traffic noise.

Options :

1. ✔ Statement A is correct but B is incorrect
2. ✖ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 106 Question Id : 63068074890 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to noise barrier are correct or incorrect.
Statements:
A) series of trees between the source and receiver of a noise will decrease the sound level of the noise at the receiver point.
B) For high-frequency sound, when diffraction occurs due to a noise barrier, the diffraction angle will be very large.

Options :

1. ✔ Statement A is correct but B is incorrect
2. ✖ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 107 Question Id : 63068074891 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following 'combinations of noise exposure' has the maximum noise dose?

Options :

1. ✖ An average noise level of 90 dBA during a 4-hour period
2. ✔ An average noise level of 90 dBA during an 8-hour period
3. ✖ An average noise level of 80 dBA during a 6-hour period
4. ✖ An average noise level of 85 dBA during an 8-hour period

Question Number : 108 Question Id : 63068074892 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is the auditory effect caused by noise pollution?

Options :

1. ✔ Permanent hearing loss
2. ✖ Loss in working efficiency
3. ✖ Reduced depth and quality of sleep
4. ✖ Interference with speech communication

Question Number : 109 Question Id : 63068074893 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is the non-auditory effect caused by noise pollution?

Options :

1. ✖ Permanent hearing loss
2. ✔ Loss in working efficiency
3. ✖ Tinnitus
4. ✖ Whistling and buzzing in ears

Question Number : 110 Question Id : 63068074894 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to Noise-Induced Hearing Loss (NIHL) are correct or incorrect.
Statements:
A) NIHL can be caused by a one-time exposure to an intense 'impulse' sound, such as an explosion.
B) NIHL can be caused by continuous exposure to loud sounds over an extended period of time, such as noise generated in a woodworking shop.

Options :

1. ✖ Statement A is correct but B is incorrect
2. ✖ Statement B is correct but A is incorrect
3. ✔ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 111 Question Id : 63068074895 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is the major gas produced from landfill and can be used as a renewable energy?

Options :

1. ✖ Carbon monoxide
2. ✔ Methane
3. ✖ Oxygen
4. ✖ Hydrogen disulphide

Question Number : 112 Question Id : 63068074896 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per CPHEEO-2016, the minimum siting distance of land for sanitary landfill sites shall be _____ away from the centre line of a highway or railway line and water supply wells.

Options :

1. ✖ 100 m
2. ✔ 500 m
3. ✖ 1000 m
4. ✖ 1500 m

Question Number : 113 Question Id : 63068074897 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is NOT an advantage of Extended Producer Responsibility (EPR) policy?

Options :

1. ✖ Creation of incentives for environmentally friendly product designs
2. ✖ Provision of a monetary incentive to the consumer to return the product or package
3. ✔ Increase in natural resource demands for packaging and product containers
4. ✖ Creation of infrastructure for collection and recycling of material

Question Number : 114 Question Id : 63068074898 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

The abbreviation 'MoEF&CC' is used to indicate a ministry dealing with Environmental Impact Assessment (EIA) studies in India. What does the abbreviation stand for?

Options :

1. ✔ Ministry of Environment, Forest and Climate Change
2. ✖ Ministry of Ecology, Forests and Climate Correction
3. ✖ Ministry of Environment, Foundry, Charcoal and Carbon
4. ✖ Ministry of Ecology, Foundry and Civil Construction

Question Number : 115 Question Id : 63068074899 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify the INCORRECT statement with respect to public participation in Environmental Impact Assessment (EIA) studies.

Options :

1. ✖ Public participation in EIA reduces communication gap between the experts and locals.
2. ✖ Public participation will be able to provide advice on management, considering local conditions.
3. ✖ Opposition to management will be reduced if people are informed.
4. ✔ Public participation in EIA should be avoided as much as possible to reduce nuisance creation.

Question Number : 116 Question Id : 63068074900 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Four ecosystems have been given, out of which three are alike in some manner and one is different. Select the one that is different with respect to the nature of the ecosystem.

Options :

1. ✖ River
2. ✖ Forest
3. ✔ Aquarium
4. ✖ Village

Question Number : 117 Question Id : 63068074901 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Select the INCORRECT statement with respect to permanent hardness of water.

Options :

1. ✔ It can be eliminated by boiling.
2. ✖ It forms insoluble scum with soap.
3. ✖ It affects the cleaning action of soap.
4. ✖ It contains dissolved salts of calcium and magnesium.

Question Number : 118 Question Id : 63068074902 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following audits is a type of management audit that comes under environmental audit categories?

Options :

1. ✖ Compliance audit
2. ✔ Policy audit
3. ✖ Acquisition audit
4. ✖ Health and safety audit

Question Number : 119 Question Id : 63068074903 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following heterotrophs is classified as a secondary consumer?

Options :

1. ✖ Rodents
2. ✖ Cows
3. ✖ Goats
4. ✔ Sparrows

Question Number : 120 Question Id : 63068074904 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is an approach to design for sustainability?

Options :

1. ✔ Selection of resources with low environmental impact
2. ✖ Design for safety and reliability
3. ✖ Design for manufacturability
4. ✖ Design for supply chain

Question Number : 121 Question Id : 63068074905 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following ISO provisions describes the principles and framework for life cycle assessment (LCA)?

Options :

1. ✔ ISO 14040:2006
2. ✖ ISO 23362:2006
3. ✖ ISO 15649:2006
4. ✖ ISO 17985:2006

Question Number : 122 Question Id : 63068074906 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

According to E Barbier, the primary objective of sustainable development is:

Options :

1. ✔ to reduce the absolute poverty of the world's poor by providing lasting and secure livelihoods that minimise resource depletion, environmental degradation, cultural disruption and social instability
2. ✖ to meet the needs of the present without compromising the ability of future generations to meet their own needs
3. ✖ equitable use of resources for meeting the needs of the present and future generations without causing damage to the environment
4. ✖ to conserve and nurture the biological diversity, gene pool and other resources for long-term food security

Question Number : 123 Question Id : 63068074907 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Select the INCORRECT statement with respect to carbon offset, which is used as a financial instrument in sustainable development.

Options :

1. ✖ Carbon offset aims at reduction in greenhouse gas emissions.
2. ✖ Use of renewable sources of energy is one of the ways to generate carbon offset.
3. ✖ One carbon offsetis equal to reduction of 1 metric ton of CO_2 or its equivalent in other greenhouse gases.
4. ✔ One metric ton of CO_2 reduction is equivalent to a reduction of around 450 kg carbon.

Question Number : 124 Question Id : 63068074908 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following organisations was the first to work on life cycle assessment?

Options :

1. ✔ The Coca-Cola Company
2. ✖ PepsiCo
3. ✖ 7UP Company
4. ✖ The Peelle Company

Question Number : 125 Question Id : 63068074909 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is NOT a sustainable development goal targeted to be achieved by 2030, according to the General Assembly of the United Nations?

Options :

1. ✖ No poverty
2. ✖ Clean water and sanitation
3. ✖ Quality education
4. ✔ Life on Mars

Question Number : 126 Question Id : 63068074910 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Who among the following introduced the concept of boundary layer and derived the equations for the boundary layer flow by correct reduction of Navier-Stokes equations?

Options :

1. ✔ Ludwig Prandtl
2. ✖ Dickens

3. ✖ Ryve
4. ✖ Von Mises

Question Number : 127 Question Id : 63068074911 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to application of the boundary layer theory are correct or incorrect.
Statements:
A) The boundary-layer theory is valid beyond the point of separation.
B) Mathematically, the application of the boundary-layer theory converts the character of governing Navier-Stroke equations from elliptic to parabolic.

Options :

1. ✖ Statement A is correct but B is incorrect
2. ✔ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 128 Question Id : 63068074912 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to point of separation and the boundary layer theory in fluids are correct or incorrect.
Statements:
A) The boundary layer theory does not speak about the location of the point of separation.
B) At the point of separation, the boundary layer thickness becomes quite large for the thin layer approximation to be valid.

Options :

1. ✖ Statement A is correct but B is incorrect
2. ✔ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 129 Question Id : 63068074913 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is the correct expression, in case of open channel flow, to measure energy at a particular point in the channel?

Options :

1. ✔ $E = y + \frac{v^2}{2g}$, where, E = specific energy, y = Pressure head, $\frac{v^2}{2g}$ = velocity head.
2. ✖ $E = 2y + \frac{v^2}{g}$, where, E = specific energy, y = Pressure head, $\frac{v^2}{2g}$ = velocity head.
3. ✖ $E = y^2 + \frac{v^2}{2g}$, where, E = specific energy, y = Pressure head, $\frac{v^2}{2g}$ = velocity head.
4. ✖ $E = y + \frac{v^2}{g}$, where, E = specific energy, y = Pressure head, $\frac{v^2}{2g}$ = velocity head.

Question Number : 130 Question Id : 63068074914 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Calculate the specific energy at a point in a rectangular open channel whose width is 2 m, depth 1 m and discharge 2 m^3/sec. Take acceleration due to gravity as 10 m/sec^2.

Options :

1. ✔ 1.05 m
2. ✖ 1.20 m
3. ✖ 1.50 m
4. ✖ 1.95 m

Question Number : 131 Question Id : 63068074915 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A lined channel of trapezoidal section carries a discharge of 6 m^3/sec, at a depth of 1 m, with bottom width 2 m and side slope of 1.5 horizontal to 1 vertical. Consider uniform flow and calculate the velocity of flow.

Options :

1. ✖ 1.312 m/sec
2. ✔ 1.714 m/sec
3. ✖ 2.135 m/sec
4. ✖ 2.426 m/sec

Question Number : 132 Question Id : 63068074916 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to basic assumptions in gradually varied flow analysis are correct or incorrect.
Statements:
A) The head loss in a reach may be computed using an equation applicable to uniform flow, having the same velocity and hydraulic mean radius of the section.
B) Channel bottom slope is large.

Options :

1. ✔ Statement A is correct but B is incorrect
2. ✖ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 133 Question Id : 63068074917 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following is an example of steady rapidly varied flow with broken flow profile?

Options :

1. ✖ The backwaters produced by a dam
2. ✔ Hydraulic jump
3. ✖ The flow of water in a pipe of constant diameter at constant velocity
4. ✖ The flow of water through pipe of constant diameter connected to a pump pumping at a constant rate which is then switched off

Question Number : 134 Question Id : 63068074918 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to the applications of a hydraulic jump are correct or incorrect.
Statements:
A) It is used to lower the water level on the d/s side of a metering flume and thus maintain low water level in the channel for irrigation, etc.
B) It is used to dissipate energy in the water flowing over the spillway and other hydraulic structures and thus prevent scouring downstream.

Options :

1. ✖ Statement A is correct but B is incorrect
2. ✔ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 135 Question Id : 63068074919 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In India, the south western monsoon called ‘kharif’ spans mostly from _____.

Options :

1. ✔ July to October
2. ✖ April to June
3. ✖ October to March
4. ✖ January to March

Question Number : 136 Question Id : 63068074920 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following crops is classified as Rabi crop in India?

Options :

1. ✔ Linseed
2. ✖ Sorghum
3. ✖ Rice
4. ✖ Maize

Question Number : 137 Question Id : 63068074921 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Calculate the delta for a crop if its duty is 1000 hectares/cumec on the field. Consider the base period of crop as 100 days.

Options :

1. ✖ 74.8 cm
2. ✔ 86.4 cm
3. ✖ 100 cm
4. ✖ 106.56 cm

Question Number : 138 Question Id : 63068074922 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to diversion head works constructed at the head of the canal are correct or incorrect.
Statements:
A) If the major part or entire ponding of water is achieved by a raised crest and a smaller part or nil part of it is achieved by the shutters, then this barrier is called a barrage.
B) If the major part or entire ponding of water is achieved by a raised crest and a smaller part or nil part of it is achieved by the shutters, then this barrier is called a weir.

Options :

1. ✖ Statement A is correct but B is incorrect
2. ✔ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 139 Question Id : 63068074923 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify whether the given statements related to diversion head works are correct or incorrect.
Statements:
A) Fish ladder arrangement is provided in the weir or dam for interrupting/preventing the movement of fishes either to the upstream or downstream.
B) Silt ejector is used for removal of silt which has entered the canal.

Options :

1. ✖ Statement A is correct but B is incorrect
2. ✔ Statement B is correct but A is incorrect
3. ✖ Both statements are correct
4. ✖ Both statements are incorrect

Question Number : 140 Question Id : 63068074924 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify the INCORRECT statement with respect to vertical curves used in highways.

Options :

1. ✖ The parabolic curve produces excellent riding qualities and is preferred in highways
2. ✖ The circular arc produces good riding qualities and is preferred in highways.
3. ✔ Provision of parabolic curves is not recommended in highways.
4. ✖ Abrupt change in the rate of grade is not recommended in highways.

Question Number : 141 Question Id : 63068074925 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

In setting out a vertical curve, the difference in elevation between a point on the tangent and the corresponding point on the curve varies as:

Options :

1. ✔ the square of its horizontal distance from the point of tangency
2. ✖ 2 times the horizontal distance from the point of tangency
3. ✖ 0.5 times the horizontal distance from the point of tangency
4. ✖ the square root of its horizontal distance from the point of tangency

Question Number : 142 Question Id : 63068074926 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

A simple circular curve of radius(r) 150 m is to be set on the ground with a central angle 60°. Calculate its length of long chord.

Options :

1. ✖ 100 m
2. ✖ 125 m
3. ✔ 150 m
4. ✖ 175 m

Question Number : 143 Question Id : 63068074927 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum

Instruction Time : 0

Correct Marks : 1

Identify the INCORRECT statement with respect to electromagnetic radiation used in remote sensing.

Options :

1. ✖ It produces a time-varying magnetic field and vice versa.
2. ✖ Once electromagnetic radiation is generated, it remains self-propagating.
3. ✖ It is capable of travelling across space.
4. ✔ Human eyes are sensitive to all the parts of the electromagnetic system.

Question Number : 144 Question Id : 63068074928 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Identify the INCORRECT statement with respect to airborne remote sensing system.

Options :

1. ✖ Very high spatial resolution images (20 cm or less) can be obtained through airborne remote sensing.
2. ✔ Airborne remote sensing is better than satellite remote sensing to map a large area at a less cost.
3. ✖ In airborne remote sensing, downward or sideward looking sensors mounted on aircrafts are used to obtain images of the earth's surface.
4. ✖ The major disadvantage of airborne remote sensing is the high cost per unit area of ground coverage.

Question Number : 145 Question Id : 63068074929 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Which of the following parameters is NOT covered in the design of structures by limit state of serviceability?

Options :

1. ✖ Deformation and deflections
2. ✖ Vibrations in the structures
3. ✖ Corrosion and durability
4. ✔ Equilibrium of the structures

Question Number : 146 Question Id : 63068074930 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS:456-2000, while doing the design for the limit state of collapse in flexure, the maximum strain in concrete at the outermost compression fibre is taken as _____ in bending.

Options :

1. ✖ 0.35
2. ✖ 0.035
3. ✖ 0.00035
4. ✔ 0.0035

Question Number : 147 Question Id : 63068074931 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

What is the failure pattern of a column with low slenderness ratio, (i.e., relatively short and stocky column) subjected to an axial load which can cause failure?

Options :

1. ✔ Fail under ultimate loads, with the material reaching its ultimate strength
2. ✖ Fail under relatively low compressive loads and susceptible to buckling failure
3. ✖ Fail due to development of considerable secondary moments
4. ✖ Fails due to development of both bending and shear stresses

Question Number : 148 Question Id : 63068074932 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS:456-2000, the minimum cross-sectional area of longitudinal reinforcement to be provided in a RCC column of size 200 mm × 600 mm is _____.

Options :

1. ✖ 750 mm^2
2. ✔ 960 mm^2
3. ✖ 1060 mm^2
4. ✖ 1250 mm^2

Question Number : 149 Question Id : 63068074933 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

As per IS:456-2000, in the case of RCC beams, what is the maximum depth of the web, beyond which side face reinforcement shall be provided along the two faces

of beam?

Options :

1. ✖ 450 mm
2. ✖ 550 mm
3. ✖ 650 mm
4. ✔ 750 mm

Question Number : 150 Question Id : 63068074934 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

According to IS:800-2007, the maximum effective slenderness ratio for tension members in which reversal of direct stresses occurs due to loads other than wind or seismic forces is _____.

Options :

1. ✖ 100
2. ✖ 140
3. ✔ 180
4. ✖ 220