1.

in each of the following questions find the odd word/ letters/number/figure from the given responses.

(A)

Room

(B)

Chamber

(C)

Veranda

(D)

Cabin

<mark>**Answer: (C)** Veranda</mark>

2.

in each of the following questions find the odd word/ letters/number/figure from the given responses.

(A)

Mouth ORgan

(B)

Electric Guitar

(C)

Keyboard

(D)

Sonata

Answer: (D) Sonata

3.

in each of the following questions find the odd word/ letters/number/figure from the given responses.

(A)

A

(B)

I

(C)

D

(D)

E

4.

in each of the following questions find the odd word/ letters/number/figure from the given responses.

(A)

RNMP

(B)

HDCF

(C)

RPOQ

(D)

HDCF

5.

Fish : Scales : : Bear : ?

(A)

Feathers
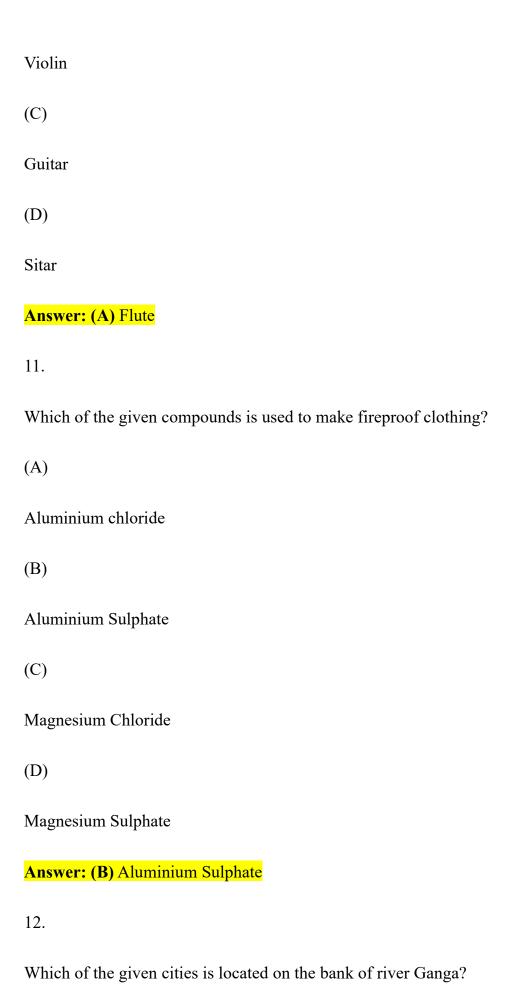
(B)
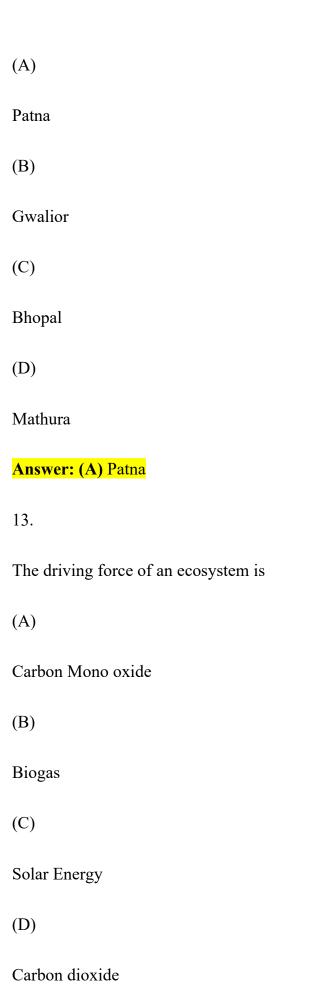
Leaves

(C)

Fur

(D)

Skin

6.

Writer : Pen : : ?

(A)

Needle

(B)

Artist : : Tailor Brush

(C)

Painter

(D)

Teacher : Canvas : Class

7.

NUMERAL : UEALRMN : : ALGEBRA : ?

(A)

LRBAGEA

(B)

BARLAGE

(C)

LERAGBA

(D)

LERABGA

8.

6 : 64 : : 11 : ?

(A)

144

(B)

169

(C)

121

(D)

124

9.

123 : 4 : : 726 ?

(A)

23

(B)

26

(C)

14

(D)

12

Answer: (D) 12

10.

In each of the following questions, find the odd number/letters/word from the given alternatives.

(A)

Flute

(B)

Violin

(C)

Guitar

(D)

Sitar

11.

Which of the given compounds is used to make fireproof clothing?

(A)

Aluminium chloride

(B)

Aluminium Sulphate

(C)

Magnesium Chloride

(D)

Magnesium Sulphate

12.

Which of the given cities is located on the bank of river Ganga?

(A)

Patna

(B)

Gwalior

(C)

Bhopal

(D)

Mathura

13.

The driving force of an ecosystem is

(A)

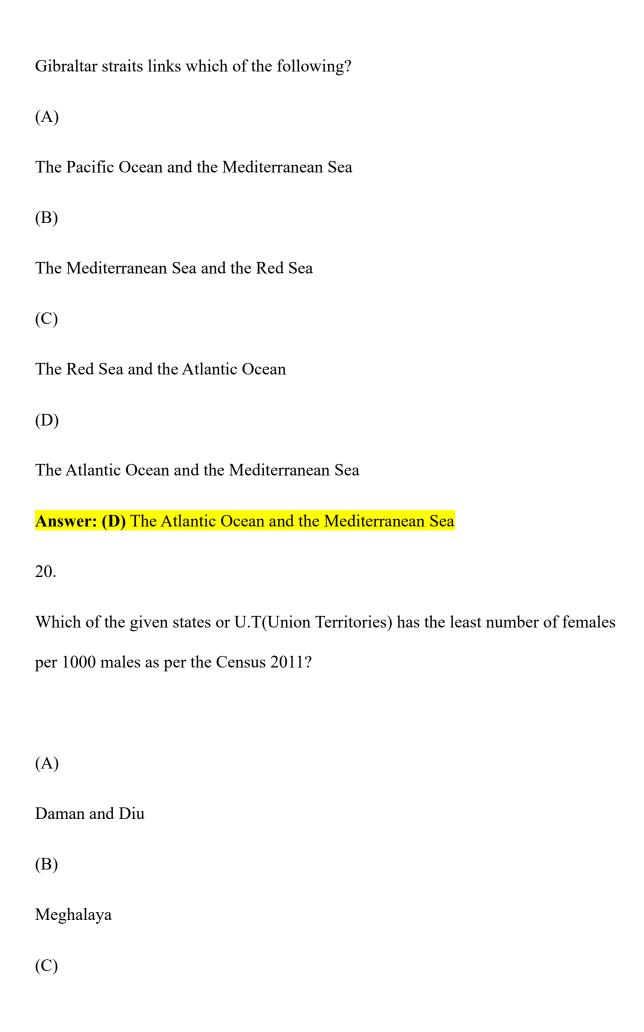Carbon Mono oxide

(B)

Biogas

(C)

Solar Energy

(D)

Carbon dioxide

14.

 Which of the given is a disease caused by protozoa?

(A)

Cancer

(B)

Typhoid

(C)

Kala-azar

(D)

Chicken Pox

Answer: (C) Kala-azar

15.

The term "Samantas" is usually seen in the medieval history of India about

(A)

Artists

(B)

Big Landlords

(C)

Servants

(D)

Queens

16.

Which of the given coins was known as 'Karshapana' in ancient literature?

(A)

Gold coins

(B)

Bronze coins

(C)

Punch marked coins

(D)

Iron coins

Answer: (C) Punch marked coins

17.

Digestion of food in human beings begins in which part of the alimentary canal?

(A)

Liver

(B)

Kidney

(C)

Mouth

(D)

Large intestine

18.

 When the metal reacts with dilute acid, which gas is formed?

(A)

Carbon Dioxide

(B)

Helium

(C)

Neon

(D)

Hydrogen

19.

Gibraltar straits links which of the following?

(A)

The Pacific Ocean and the Mediterranean Sea

(B)

The Mediterranean Sea and the Red Sea

(C)

The Red Sea and the Atlantic Ocean

(D)

The Atlantic Ocean and the Mediterranean Sea

Answer: (D) The Atlantic Ocean and the Mediterranean Sea

20.

Which of the given states or U.T(Union Territories) has the least number of females per 1000 males as per the Census 2011?

(A)

Daman and Diu

(B)

Meghalaya

(C)

Andaman Nicobar

(D)

Haryana

21.

In old times, the construction of superstructure was done by using which of the following building material?

(A)

Rubber

(B)

Timber

(C)

Bamboo

(D)

Mud

22.

Which of the following is defined at the uppermost part of the building which is constructed in the form of a framework to give protection to the building against rain, heat, snow, wind, etc?

(A)

Lintels

(B)

Roof

(C)

Chajja

(D)

Truss

Answer: (B) Roof

23.

Which of the following tools is used for cutting soft bricks?

(A)

Jointer

(B)

Scutch

(C)

Spirit level

(D)

Trowel

24.

A wall may be defined as that component of a building, whose width is _____

times its thickness.

(A)

2

(B)

4

(C)

6

(D)

8

25.

_____ has presented the results of structural analysis based on calculated masonry method in the form of nomograms.

(A)

British Code CP. 3

(B)

Concrete Association of India

(C)

British Code CP. 11

(D)

National Building Code of India (SP: 7-2005

Answer: (D) National Building Code of India (SP: 7-2005

26.

Which of the following is provided on the horizontal shores when one building is higher than the other?

(A)

Flying shore

(B)

Pile Underpinning

(C)

 Pit Underpinning

(D)

Raking shore

<mark>Answer: (D) Raking shore</mark>

27.

Which of the following term in the buildings is used to mean the coming out of water from components like walls and floors of the buildings?

(A)

Water proofing

(B)

Dampness

(C)

Termite proofing

(D)

 Damp proofing

28.

Which of the following is a mixture of cement, sand, pebbles or crushed rock and water, which, when placed in the skeleton of forms and are allowed to cure, becomes hard like a stone?

(A)

Cement mortar

(B)

Cement grouting

(C)

Cement concrete

(D)

Cement slurry

29.

Which of the following cement is used in sewage and water treatment plants?

(A)

Sulphate Resisting Cement

(B)

Quick Setting Cement

(C)

Low Heat Cement

(D)

Rapid Hardening Cement

Answer: (A) Sulphate Resisting Cement

30.

Which of the following ratio is also known as water-cement ratio?

(A)

Weight of water to the weight of aggregates

(B)

Density of cement to the Density of cement

(C)

Weight of water to the weight of cement

(D)

Volume of cement to the volume of cement

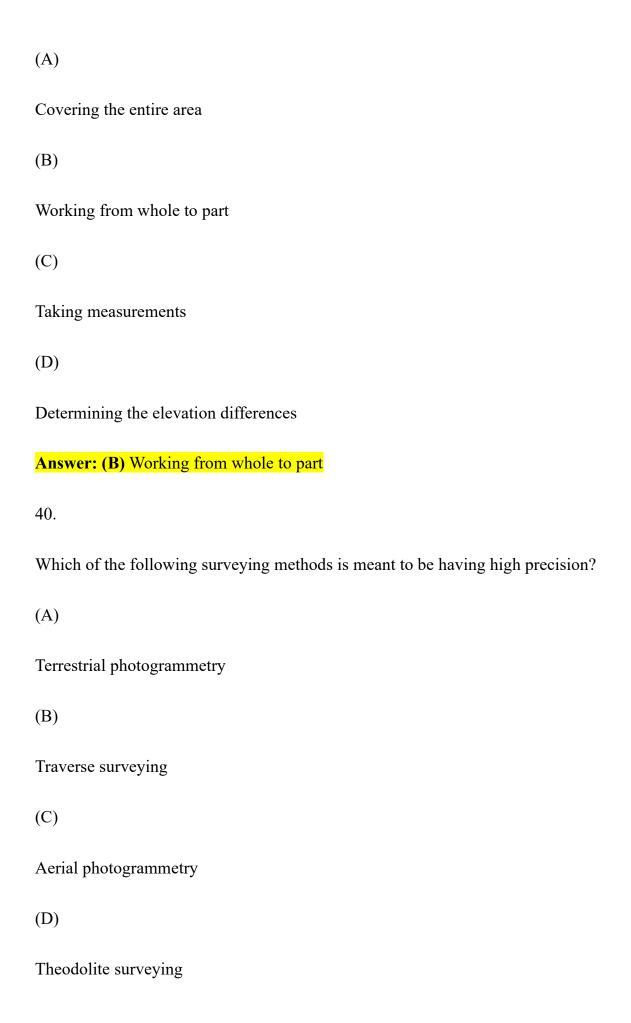**Answer: (C)** Weight of water to the weight of cement

31.

How many layers of concrete are needed to fill a slump cone?

(A)

5 layers by volume

(B)

3 equal layers by height

(C)

3 equal layers by volume

(D)

5 layers

<mark>Answer: (C) 3 equal layers by volume</mark>

32.

What is the total percentage of aggregates in concrete in terms of volume?

(A)

65-80%

(B)

0.9

(C)

60-75%

(D)

0.4

33.

Crushed stone, gravel, and ordinary sand are examples of which type of cement aggregate?

(A)

Heavy-weight aggregate

(B)

Lightweight aggregate

(C)

Normal-weight aggregate

(D)

Both Normal-weight and Heavy-weight aggregate

34.

 What happens if mineral oil is present in mixing for concrete?

(A)

Gives more slump

(B)

Improves strength

(C)

Gives a smooth surface

(D)

Reduces strength

<mark>**Answer: (B)** Improves strength</mark>

35.

What is wet process?

(A)

Grinding and mixing of the raw materials in their overheated state

(B)

Grinding and mixing of the raw materials in their wet state

(C)

Grinding and mixing of the raw materials in their dry state

(D)

Grinding and mixing of the raw materials in their medium state

<mark>**Answer: (B)** Grinding and mixing of the raw materials in their wet state</mark>

36.

The form work is usually removed after _____ for walls, columns, and the vertical faces of all structural components.

(A)

24 to 48 hours

(B)

72 hours

(C)

56 hours

(D)

24 hours

<mark>**Answer: (A)** 24 to 48 hours</mark>

37.

Which of the following cannot be done with the help of theodolite in surveying?

(A)

Measuring horizontal distances

(B)

Prolonging survey lines

(C)

Laying off horizontal angles

(D)

Locating points on lines

<mark>Answer: (A) Measuring horizontal distances</mark>

38.

Which of the following branch of surveying is used to find the elevations of given points with respect to given or assumed datum?

(A)

Plane table surveying

(B)

Traversing

(C)

Contouring

(D)

Levelling

<mark>Answer: (D) Levelling</mark>

39.

 Which of the following is the principles of surveying?

(A)

Covering the entire area

(B)

Working from whole to part

(C)

Taking measurements

(D)

Determining the elevation differences

Answer: (B) Working from whole to part

40.

Which of the following surveying methods is meant to be having high precision?

(A)

Terrestrial photogrammetry

(B)

Traverse surveying

(C)

Aerial photogrammetry

(D)

Theodolite surveying

41.

 Which of the following doesn't describe the use of hydrographic surveying?

(A)

Nautical charts for navigation

(B)

Establishing mean sea level

(C)

Laying an Alignment

(D)

Making underground investigations

Answer: (B) Establishing mean sea level

42

Which of the following type of surveying can be employed in a magnetic area?

(A)

Compass surveying

(B)

Traverse surveying

(C)

Plane table surveying

(D)

Theodolite surveying

<mark>**Answer: (C)** Plane table surveying</mark>

43.

Which of the following survey deals with bodies of water for the purpose of navigation, water supply, harbour works or for the determination of mean sea level?

(A)

City surveying

(B)

Cadastral surveying

(C)

Topographic surveying

(D)

Hydrographic surveying

Answer: (D) Hydrographic surveying

44.

Determining points of strategic importance are called _____

(A)

Traverse surveying

(B)

Military surveying

(C)

City surveying

(D)

Topographic surveying

<mark>Answer: (B) Military surveying</mark>

45.

For proper field control, which of the following methods is best suited for quick determination of water content of a soil mass?

(A)

oven drying method

(B)

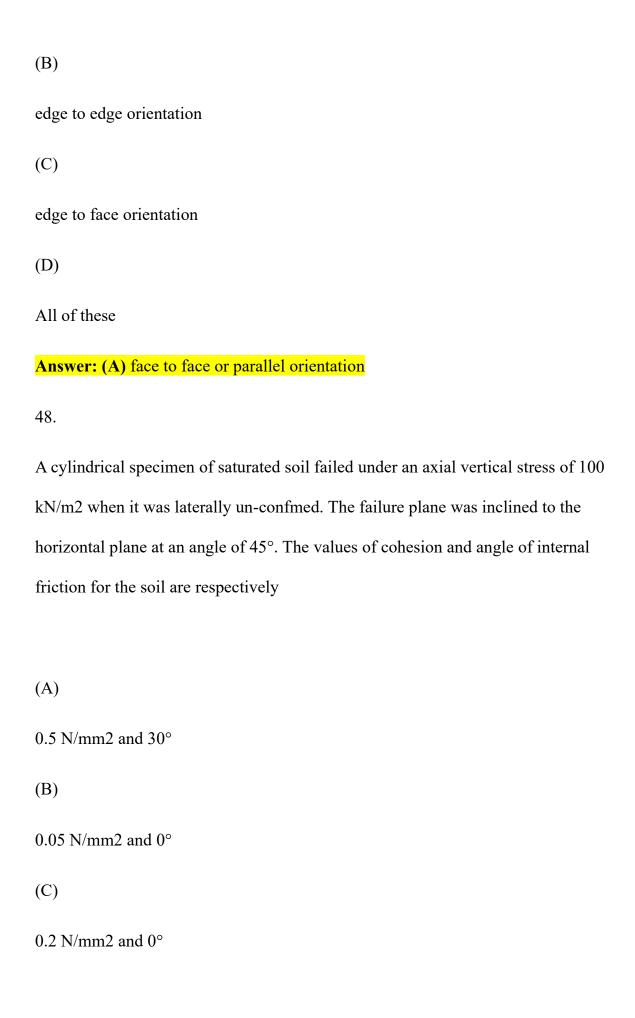sand bath method

(C)

alcohol method

(D)

calcium carbide method

46.

Which of the following methods is more suitable for the determination of permeability

of clayey soil?

(A)

constant head method

(B)

falling head method

(C)

horizontal permeability test

(D)

None

47.

Dispersed type of soil structure is an arrangement comprising particles having

(A)

face to face or parallel orientation

(B)

edge to edge orientation

(C)

edge to face orientation

(D)

All of these

48.

A cylindrical specimen of saturated soil failed under an axial vertical stress of 100 kN/m2 when it was laterally un-confmed. The failure plane was inclined to the horizontal plane at an angle of 45°. The values of cohesion and angle of internal friction for the soil are respectively
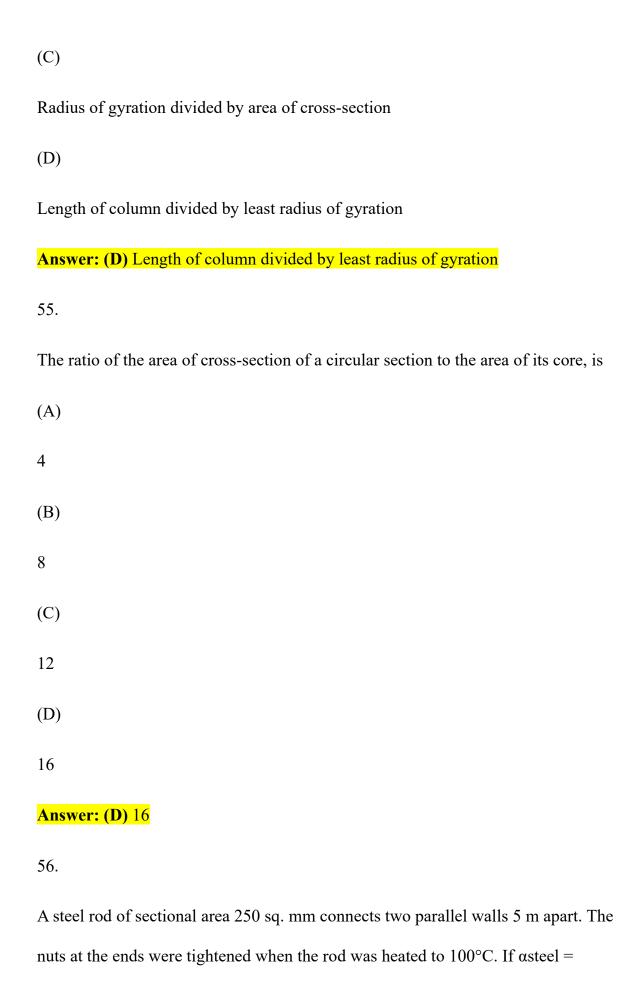
(A)

0.5 N/mm2 and 30°

(B)

0.05 N/mm2 and 0°

(C)

0.2 N/mm2 and 0°

(D)

0.05 N/mm2 and 45°

49.

If the volume of voids is equal to the volume of solids in a soil mass, then the values of porosity and voids ratio respectively are

(A)

1.0 and 0.0

(B)

0.0 and 1.0

(C)

0.5 and 1.0

(D)

1.0 and 0.5

50.

The rise of water table below the foundation influences the bearing capacity of soil mainly by reducing
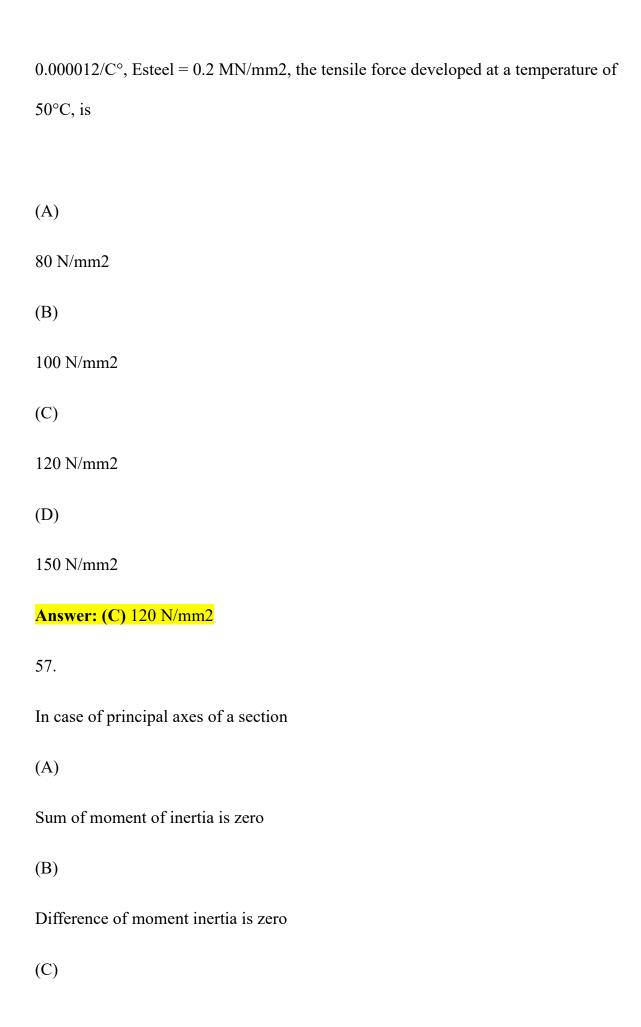
(A)

cohesion and effective angle of shearing resistance

(B)

cohesion and effective unit weight of soil

(C)

effective unit weight of soil and effective angle of shearing resistance

(D)

effective angle of shearing resistance

<mark>Answer: (B)</mark> cohesion and effective unit weight of soil

51.

A retaining wall 6m high supports a backfill with a surcharge angle of 10°. The back

of the wall is inclined to the vertical at a positive batter angle of 5°. If the angle of

wall friction is 7°, then the resultant active earth pressure will act at a distance of 2 m

above the base and inclined to the horizontal at an angle of

(A)

7°

(B)

10°

(C)

12°

(D)

17°

52.

The total and effective stresses at a depth of 5 m below the top level of water in a swimming pool are respectively

(A)

Zero and zero

(B)

0.5 kg/cm2 and zero

(C)

0.5 kg/cm2 and 0.5 kg/cm2

(D)

1.0 kg/cm2 and 0.5 kg/cm2

53.

If a concrete column 200 × 200 mm in cross-section is reinforced with four steel bars of 1200 mm2 total cross-sectional area. Calculate the safe load for the column if permissible stress in concrete is 5 N/mm2 and Es is 15 Ec

(A)

264 MN

(B)

274 MN

(C)

284 MN

(D)

294 MN

54.

Slenderness ratio of a long column, is

(A)

Area of cross-section divided by radius of gyration

(B)

Area of cross-section divided by least radius of gyration

(C)

Radius of gyration divided by area of cross-section

(D)

Length of column divided by least radius of gyration

<mark>**Answer: (D)** Length of column divided by least radius of gyration</mark>

55.

The ratio of the area of cross-section of a circular section to the area of its core, is

(A)

4

(B)

8

(C)

12

(D)

16

<mark>**Answer: (D)** 16</mark>

56.

A steel rod of sectional area 250 sq. mm connects two parallel walls 5 m apart. The

nuts at the ends were tightened when the rod was heated to 100°C. If αsteel =

0.000012/C°, Esteel = 0.2 MN/mm2, the tensile force developed at a temperature of 50°C, is

(A)

80 N/mm2

(B)

100 N/mm2

(C)

120 N/mm2

(D)

150 N/mm2

<mark>**Answer: (C)** 120 N/mm2</mark>

57.

In case of principal axes of a section

(A)

Sum of moment of inertia is zero

(B)

Difference of moment inertia is zero

(C)

Product of moment of inertia is zero

(D)

None

58.

Maximum principal stress theory for the failure of a material at elastic point, is known

(A)

Guest's or Trecas' theory

(B)

St. Venant's theory

(C)

Rankine's theory

(D)

Von Mises' theory

59.

The locus of reaction of a two hinged semi-circular arch, is

(A)

Straight line

(B)

Parabola

(C)

Circle

(D)

Hyperbola

60.

The shape factor of standard rolled beam section varies from

(A)

1.10 to 1.20

(B)

1.20 to 1.30

(C)

1.30 to 1.40

(D)

1.40 to 1.50

61.

An R.C.C beam of 25 cm width has a clear span of 5 metres and carries a U.D.L. of 2000 kg/m inclusive of its self-weight. If the lever arm of the section is 45 cm., the beam is

(A)

Safe in shear

(B)

Is safe with stirrups

(C)

Is safe with stirrups and inclined members

(D)

Needs revision of the section

<mark>Answer: (A) Safe in shear</mark>

62.

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

(A)

4 mm

(B)

5 mm

(C)

6 mm

(D)

8 mm

Answer: (C) 6 mm

63.

The diameter of main bars in R.C.C. columns, shall not be less than

(A)

6 mm

(B)

8 mm

(C)

10 mm

(D)

12 mm

Answer: (D) 12 mm

64.

Minimum spacing between horizontal parallel reinforcement of the same size should not be less than

(A)

One diameter

(B)

2.5 diameters

(C)

3 diameters

(D)

3.5 diameters

<mark>Answer: (A) One diameter</mark>

65.

If T and R are tread and rise respectively of a stair, then

(A)

$2R + T = 60$

(B)

$R + 2T = 60$

(C)

$2R + T = 30$

(D)

$R + 2T = 30$

66.

An intermediate T-beam reinforced with two layers of tensile steel with clear cover 13 cm encased with the floor of a hall 12 meters by 7 meters, is spaced at 3 meters from adjoining beams and if the width of the beam is 20 cm, the breadth of the flange is

(A)

300 cm

(B)

233 cm

(C)

176 cm

(D)

236 cm

67.

Pick up the incorrect statement from the following: Tensile reinforcement bars of a rectangular beam

(A)

Are curtailed if not required to resist the bending moment

(B)

Are bent up at suitable places to serve as shear reinforcement

(C)

Are bent down at suitable places to serve as shear reinforcement

(D)

Are maintained at bottom to provide at least local bond stress

Answer: (C) Are bent down at suitable places to serve as shear reinforcement

68.

According to the steel beam theory of doubly reinforced beams

(A)

Tension is resisted by tension steel

(B)

Compression is resisted by compression steel

(C)

Stress in tension steel equals the stress in compression steel

(D)

All of these

69.

Uniform flow occurs when

(A)

the flow is steady

(B)

the flow is streamline

(C)

size and shape of the cross section in a particular length remain constant

(D)

size and cross section change uniformly along length

70.

When a body floating in a liquid, is displaced slightly, it oscillates about

(A)

e.g. of body

(B)

center of pressure

(C)

center of buoyancy

(D)

metacentre

Answer: (D) metacentre

71.

The normal stress is same in all directions at a point in a fluid

(A)

only when the fluid is frictionless

(B)

only when the fluid is incompressible and has zero viscosity

(C)

when there is no motion of one fluid layer relative to an adjacent layer

(D)

irrespective of the motion of one fluid layer relative to an adjacent layer
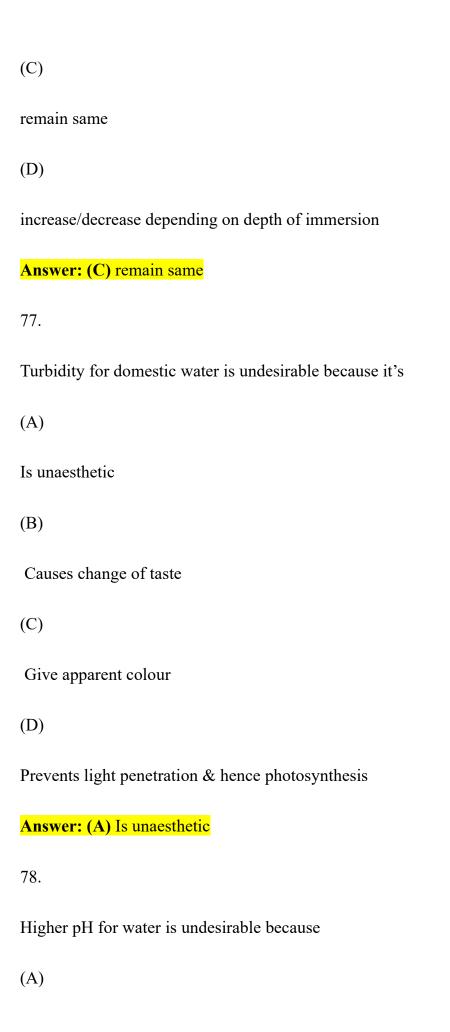
72.

The surface tension of mercury at normal temperature compared to that of water is

(A)

more

(B)

less

(C)

same

(D)

more or less depending on size of glass tube

73.

If 850 kg liquid occupies volume of one cubic meter, men 0.85 represents its

(A)

specific weight

(B)

specific mass

(C)

specific gravity

(D)

specific density

74.

Free surface of a liquid tends to contract to the smallest possible area due to force of

(A)

surface tension

(B)

viscosity

(C)

friction

(D)

cohesion

75.

The resultant of all normal pressure's acts

(A)

at e.g. of body

(B)

at center of pressure

(C)

vertically upwards

(D)

at metacentre

76.

A bucket of water is hanging from a spring balance. An iron piece is suspended into water without touching sides of bucket from another support. The spring balance reading will

(A)

increase

(B)

decrease

(C)

remain same

(D)

increase/decrease depending on depth of immersion

77.

Turbidity for domestic water is undesirable because it's

(A)

Is unaesthetic

(B)

 Causes change of taste

(C)

 Give apparent colour

(D)

Prevents light penetration & hence photosynthesis

78.

Higher pH for water is undesirable because

(A)

It corrodes zinc, copper & lead pipes

(B)

 It includes sour taste

(C)

It renders chlorination less effective

(D)

 It promotes growth of iron & sulphur bacteria

Answer: (C) It renders chlorination less effective

79.

Presence of nitrogen in a waste water sample is due to the decomposition of

(A)

 Carbohydrates

(B)

Proteins

(C)

Fats

(D)
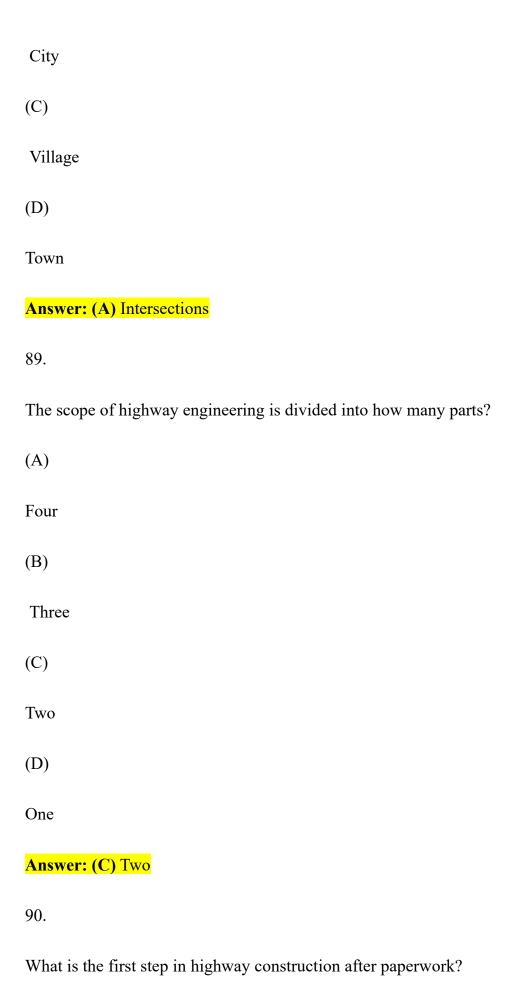
Vitamins

Answer: (B) Proteins

80.

More than 1mg/l of fluorides causes

(A)

Dental caries

(B)

Mottled enamel of teeth

(C)

 Skeletal fluorosis

(D)

Prevent dental cavities & tooth decay in children

Answer: (B) Mottled enamel of teeth

81.

Design period mainly depends on

(A)

 Percentage interest at which the loan is taken

(B)

Capacity of the municipality to repay

(C)

 Quality of fittings used

(D)

Rate of growth of population

82.

 A river intake may be situated on

(A)

A straight reach

(B)

 The convex side of a curved course

(C)

Downstream side of outfall sewer

(D)

Proximity to industries

83.

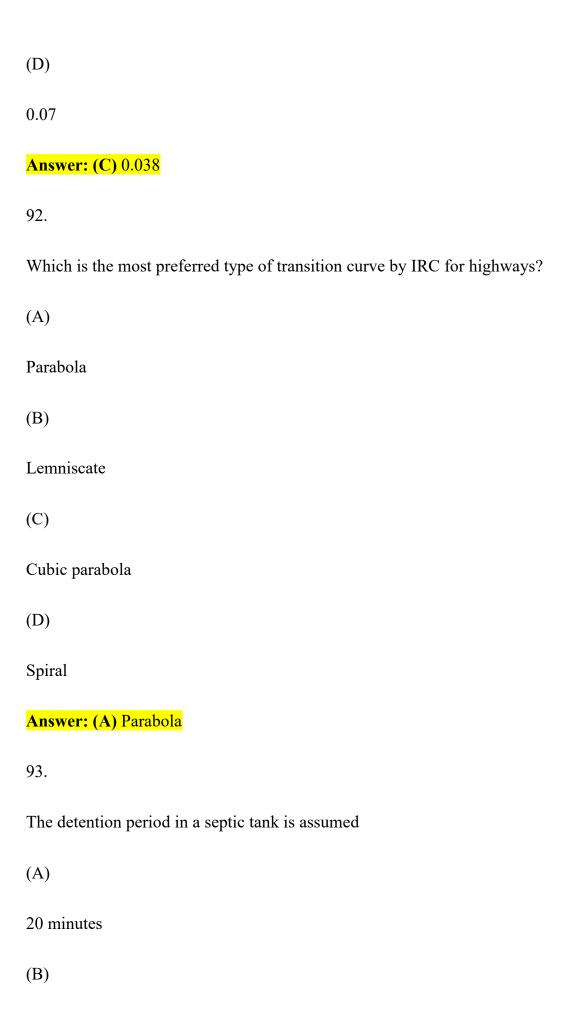Permissible velocity through coarse screens is not greater than

(A)

 1m/s

(B)

1m/min

(C)

0.3 m/ s

(D)

0.3 m/min

84.

Optimum dose of coagulant means the least dose that produces

(A)

 Maximum amount of floc

(B)

 Floc whose density is very high

(C)

Max. Amount of floc within the least time

(D)

Readily settleable floc

85.

Design of road intersections is a part of _____

(A)

Harbour engineering

(B)

Highway engineering

(C)

Railway engineering

(D)

Traffic engineering

86.

The surveys of highway alignment are completed in how many stages?

(A)

Four

(B)

Three

(C)

 Two

(D)

One

87.

Highway should be planned for _____

(A)

 Traffic studies

(B)

Present requirements

(C)

Present requirements and future requirements

(D)

Traffic developments

88.

Which of the following will be most preferred for highway lighting during highway construction?

(A)

Intersections

(B)

City

(C)

Village

(D)

Town

89.

The scope of highway engineering is divided into how many parts?

(A)

Four

(B)

Three

(C)

Two

(D)

One

90.

What is the first step in highway construction after paperwork?

(A)

Evaluation

(B)

Bill of quantities

(C)

Surveying

(D)

Estimation

<mark>**Answer: (C)** Surveying</mark>

91.

The design speed on a highway is 60kmph; calculate the super elevation if radius of curve is 150m and coefficient of friction is 0.15.

(A)

 0.15

(B)

0.04

(C)

0.038

(D)

0.07

92.

Which is the most preferred type of transition curve by IRC for highways?

(A)

Parabola

(B)

Lemniscate

(C)

Cubic parabola

(D)

Spiral

93.

The detention period in a septic tank is assumed

(A)

20 minutes

(B)

25 minutes

(C)

30 minutes

(D)

40 minutes

94.

Carpet area does not include the area of

(A)

The walls along with doors and other openings

(B)

Bath room and lavatory

(C)

Kitchen and pantry

(D)

None

95.

While estimating the qualities for the construction of a building, the correct metric unit is

(A)

Meter for length

(B)

Cubic metre for area

(C)

Square meters for volume

(D)

Liter for capacity

96.

The volume is measured correct to the nearest

(A)

0.01 cum

(B)

0.02 cum

(C)

0.03 cum

(D)

0.04 cum

97.

The area is measured correct to the nearest

(A)

0.01 sqm

(B)

0.02 sqm

(C)

0.03 sqm

(D)

0.04 sqm

98.

In the mid-section formula

(A)

The mean depth is the average of depths of two consecutive sections

(B)

The area of mid-sections is calculated by using mean depth

(C)

The volume of the earth work is calculated by multiplying the mid-section area by the distance between the two original sections

(D)

All of these

99.

Anti-siphonage pipe is connected to

(A)

Main soil pipe

(B)

Bottom of P trap W.C.

(C)

Top of P trap W.C.

(D)

Side of water closet

100.

In long and short wall method of estimation, the length of long wall is the centre-to-centre distance between the walls and

(A)

Breadth of the wall

(B)

Half breadth of wall on each side

(C)

One fourth breadth of wall on each side

(D)

None

Answer: (B) Half breadth of wall on each side