



SSC JE Civil Engineering 2011

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General Intelligence and Reasoning

Instructions

Select the related word /letters/ number from the given alternatives.

Question 1

25 : 37 :: 49 ?

- A 42
- B 56
- C 64
- D 65

Answer: D

Question 2

9:39::45:?

- A 175
- B 185
- C 195
- D 205

Answer: C

Question 3

ONM: JIH:: TSR: ?

- A TSU
- B LMN
- C XYZ
- D ONM

Answer: C

Question 4

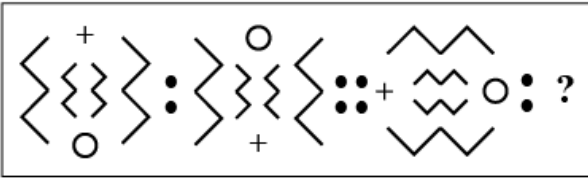
ZYXW : DCBA :: SRQP ?

- A ZXYP
- B KJIH
- C JHIL
- D ABCD

Answer: B

Question 5

Question figures:



A



B



C



D



Answer: A

Question 6

Tired : work :: Happy : ?

A Rest

B Success

C Eating

D Exercise

Answer: B

Question 7

Music : sitar :: ?

A Author: Book

B Literature: Novel

C Guitar: Sound

D Painter: Picture

Answer: B

Question 8

DEA: 10::ACE:?

- A 8
- B 10
- C 9
- D 11

Answer: C

Instructions

Find the odd word/number/letter/word or number pair from the given alternatives.

Question 9

- A 36
- B 64
- C 81
- D 46

Answer: D

Question 10

- A Apple
- B Mango
- C Potato
- D Orange

Answer: D

Question 11

- A Father-Daughter
- B Husband – Wife
- C Son–Mother
- D Brother – Sister

Answer: B

Question 12

- A BCD
- B FGH
- C NOP

D IKL

Answer: D

Question 13

A DKHM

B JNPR

C KORT

D MQTV

Answer: B

Question 14

A 4-9

B 36-49

C 16-25

D 64-80

Answer: D

Question 15

A 5698

B 7894

C 9865

D 8793

Answer: D

Instructions

For the following questions answer them individually

Question 16

Which one of the given responses would be the English dictionary order of the following words ?

1. Protein
2. Problem
3. Proverb
4. Property
5. Project

A 2, 1, 4, 3, 5

B 1, 2, 3, 4, 5

C 3; 4, 5, 2, 1

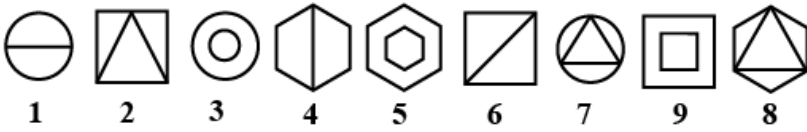
D 2, 5, 4, 1, 3

Answer: D

Question 17

A series of figures is given which can be grouped into classes. Select the group into which the figures can be classified from the given responses.

Question figures:



A 1,2,3; 4,5,6; 7,8,9

B 1,4,6; 2,7,9; 3,5,8

C 1,3,7; 2,6,9; 4,5,8

D 1,2,4; 3,6,5; 7,8,9

Answer: B

Question 18

Which one of the given responses would be a meaningful order of the following words ?

1. Nation
2. Village
3. Taluk
4. District
- 5: State

A 2,3,4,1,5

B 1,3,5,4,2

C 2,3,4,5,1

D 1,2,3,4,5

Answer: C

Question 19

Which one set of letters when sequentially placed at the gaps in the given letter series shall complete it ?
beabbbca_bcabbab

A acaa

B cabe

C acba

D cacc

Answer: B

Instructions

A series is given with one/ two term(s) missing . Choose the correct alternative from the given ones that will complete the series.

Question 20

4, 14, 34, ?, 104, 154

A 64

B 54

C 74

D 84

Answer: A

Question 21

75, 77, 72, 80, 69, 83, ?, ?

A 65,87

B 66,80

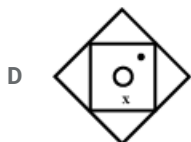
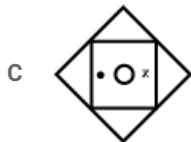
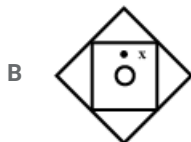
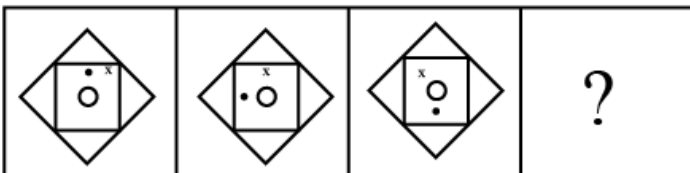
C 66,86

D 72,86

Answer: C

Question 22

Question figures:



Answer: A

Question 23

A, E, I, M, Q, U, ?

A V

B W

C Z

D Y

Answer: D

Question 24

CDF, DEC, EFH,?

A FGI

B FGH

C FHG

D EFI

Answer: A

Instructions

For the following questions answer them individually

Question 25

Which number is wrong in the given series ?

7, 9, 15, 27, 51, 99

A 7

B 9

C 15

D 27

Answer: A

Question 26

The average age of 10 children in a class is 12 years. If two children aged 14 and 16 years join the class, it will raise the average age by how much?

A 2 months

B 4 months

C 6 months

D 8 months

Answer: C

Question 27

If in a certain code, TOWER is written as OTEWR, then in that code, which word will be written as RTAIL ?

A TRIAL

B TRAIL

C TRLAI

D TAILR

Answer: A

Question 28

If HARD is coded as 1357 and SOFT is coded as 2468, then 21448 stands for

A HSOOT

B SHOQS

C SHOOT

D RGOQT

Answer: C

Question 29

Choose one word out of the given alternatives, which can be formed from the letters of the word 'DISOBEDIENCE'.

A DISTANCE

B OBEDIENT

C BESIDE

D DEFENCE

Answer: C

Question 30

Sachin walked 10 kms to north, turned left and walked 5 kms. Again he turned south and walked 4 kms. Finally, again he turned left and walked 5 kms. In which direction is Sachin from the starting point?

A East

B West

C North

D South

Answer: C

Question 31

A boy starts from home, which faces south. He walks a distance of 10 m, turns right and walks 10 m. Then he turns right and walks 10 m, then turns left and walks 10 m and walks back 5 m. What is the distance between the home and the boy?

A 35m

B 45m

C 15m

D 20 m

Answer: C

Question 32

Five students M,N,O, P and @ are standing in 2 row. O, who is the third to the left of P, is to the immediate right of M and second to the left of @ Q, who is not at any of the ends, is the third to the right of M. P is at one of the ends. Then who is standing in the middle ?

- A M
- B N
- C o
- D Q

Answer: B

Question 33

Among 5 sons of Raghav, Anand is the elder brother of Bhima, and Chandra is the elder brother of Anand. Bhima has younger brothers Dhanu and Ishwar. Who is the eldest son of Raghav?

- A Bhima
- B Anand
- C Chandra
- D Dhanu

Answer: C

Question 34

Amul is Atul's brother. Darly is Atul's mother. Lali is Darly's mother. Prakash is Lali's father. How is Amul related to Prakash ?

- A Son-in-law
- B Grandson
- C Great-grandson
- D Son

Answer: C

Question 35

A father's age is 3 times of his son's age at present. 10 years back, the father's age was 5 times of his son's age. What is the age of the son at present ?

- A 20 years
- B 30 years
- C 25 years
- D 15 years

Answer: A

Question 36

I am twelfth in the queue from either end. How many persons are there in the queue ?

A 13

B 23

C 14

D 24

Answer: B

Question 37

Choose one word out of the given alternatives, which cannot be formed from the letters of the word 'COMMENTATOR'.

A MENTOR

B COMMON

C ROTATE

D MEMBER

Answer: D

Question 38

Statements:

1. Some teachers are students.
2. All Students are girls.

Conclusions:

- I. All teachers are girls.
- II. Some girls are teachers.
- III. Some girls are students.
- IV. All students are teachers.

A Only I follows

B Only I and III follow

C Only II and III follow

D All follow

Answer: C

Question 39

Statements :

1. All young ladies are modern.
2. No modern men are religious minded.

Conclusions:

- I. No young ladies are religious minded.
- II. No young men are religious minded.

A Only I follows

B Only II follows

C Both I and II follow

D Neither I nor II follows

Answer: D

Question 40

There is an address which has been reproduced against (a), (b), (c) and (d). Three of these have some mistake or the other. The one without any mistake is your answer.

The Manager R&C Finance Limited
The Metropolitan, 10 Floor, B Block, Bandra (W)
Mumbai-400051

The Manager
R&C Finance Limited
A The Metropolitan, 10 Floor B Block, Bandra
(W)
Mumbai – 500051

The Manager
R&C Finance Limited
B The Metropolitan, 10th Floor, B Block, Bandra
(W)
Mumbai – 400051

The Manager,
R&C Finance Limited
C The Metropolitan, 11th Floor, D Block, Bandra
(W)
Mumbai – 400051

The Manager
R&C Finance Limited
D The Metropolitan, 10th Floor, B Block, Bandra
(W)
Mumbai – 400050

Answer: B

Instructions

Select the missing number from the given responses.

Question 41

8	3	9
6	4	2
4	8	?
192	96	324

A 48

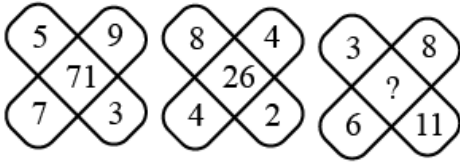
B 28

C 18

D 38

Answer: C

Question 42



- A 66
- B 68
- C 70
- D 62

Answer: D

Instructions

For the following questions answer them individually

Question 43

If ' \div ' stands for ' \times ', ' $-$ ' for ' $+$ ', ' $+$ ' for ' \div ', then which of the following equations is correct ?

- A $21 - 3 + 9 \div 12 = 51$
- B $21 + 3 \div 9 - 12 = 75$
- C $21 \div 9 + 3 - 12 = 51$
- D $21 - 3 \div 9 + 12 = 75$

Answer: B

Question 44

Some equations are solved on the basis of a certain system. On the same basis, find out the correct answer for the unsolved equation. If $4 + 3 = 25$ and $5 + 2 = 29$, then $6 + 4 = ?$

- A 52
- B 100
- C 50
- D 48

Answer: A

Question 45

Postal PIN codes of 25 letters are given below. The first digit from the left indicates the zone and the last three digits the delivery Post Office. How many maximum letters are meant for the same delivery Post Office under Zone 2 ?

101012	221718	303051	221104	421015
221054	310032	101113	221108	230221
308015	308012	221054	101012	221054
111118	221054	210502	221054	101114
210512	182114	128107	183115	610014

- A 3

B 4

C 5

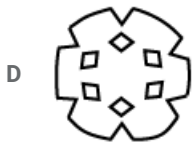
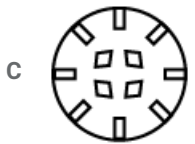
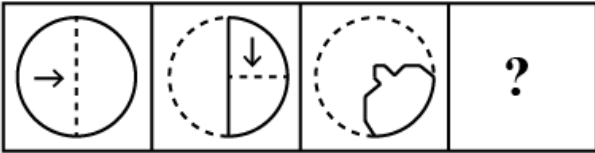
D 6

Answer: D

Question 46

A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate, how it will appear when opened.

Question figures:

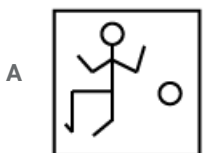
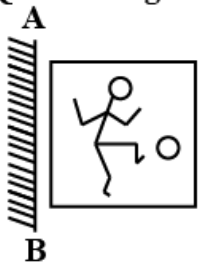


Answer: B

Question 47

If a mirror is placed on the line AB, then which of the answer figures is the correct image of the given question figure ?

Question figures:



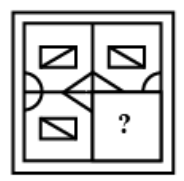


Answer: C

Question 48

Which answer figure will complete the question figure?

Question figures:



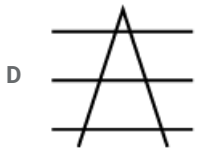
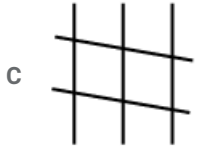
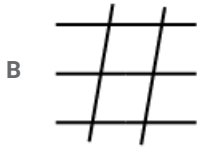
Answer: B

Question 49

From the given answer figures, select the one in which the question figure is hidden/embedded.

Question figures:

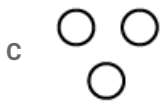
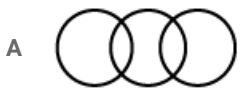




Answer: D

Question 50

Which of the given diagrams correctly represents the relationship among Mammals, Reptiles and Birds ?



Answer: C

General Awareness

Instructions

For the following questions answer them individually

Question 51

Who was the first Mughal ruler to introduce prohibition ?

- A Babar

- B Akbar
- C Humayun
- D Jahangir

Answer: D

Question 52

The Congress adopted the 'purna Swaraj' resolution at Lahore on

- A 31st April, 1929
- B 31st December, 1929
- C 12th March, 1930
- D 8th August, 1942

Answer: B

Question 53

Which one of the following is not a basic industry?

- A Steel
- B Fertilizer
- C Paper
- D Cement

Answer: D

Question 54

'Agmark' seal is issued for commodities like

- A atta, ghee and honey
- B biscuit, egg and notebooks
- C milk, cotton and sweets
- D cream, vegetables and snacks

Answer: A

Question 55

SEZ stands for

- A Southern Economic Zone
- B South European Zone
- C Special Economic Zone
- D Special Eastern Zone

Answer: C

Question 56

The Agricultural Prices Commission was set up in the year

- A 1945
- B 1955
- C 1965
- D 1975

Answer: C

Question 57

Prof. Amartya Sen was awarded Nobel Prize in Economics in 1988 for his work on

- A Food and Famines
- B Welfare Economics
- C Poverty
- D Empowerment of women

Answer: B

Question 58

Who is the ultimate authority to decide whether a Bill is a Financial Bill or not ?

- A Finance Minister
- B Speaker (Lok Sabha)
- C Prime Minister
- D President of India

Answer: D

Question 59

The writ that looks into the authority of a person in performing an official act is

- A Habeas Corpus
- B Mandamus
- C Prohibition
- D Quo warranto

Answer: A

Question 60

Shimla Pact was signed by

- A India and Pakistan
- B India and Sri Lanka

C India and Nepal

D India and China

Answer: A

Question 61

The Vice-President of India is elected by

A State Legislatures (Assemblies)

B two Houses of Parliament

C State Government

D People

Answer: B

Question 62

In addition to Rashtrapati Bhavan at Delhi, whereelse in India are official residences of the President located ?

A Hyderabad, Bengaluru

B Hyderabad, Shimla

C Hyderabad, Bhopal

D Hyderabad, Lucknow

Answer: B

Question 63

Which language was mostly used for the propagation of Buddhism in ancient period ?

A Sanskrit

B Pali

C Prakrit

D Sauraseni

Answer: B

Question 64

In which of the following reptiles is the heart a 4- chambered structure ?

A Lizard

B Turtle

C crocodile

D Snake

Answer: C

Question 65

Dogs are used for detective work by the police because they

- A Can hear ultrasonic waves of frequency upto 50,000 Hz
- B can hear infrasonic waves
- C can hear ultrasonic waves of frequency upto 1,20,000 Hz
- D Can hear sound waves of frequency in the range 20 Hz to 20,000 Hz

Answer: A

Question 66

The working principle of 'Jet engine' is the conservation of

- A linear momentum
- B angular momentum
- C energy
- D mass-energy

Answer: A

Question 67

Rabindranath Tagore renounced his knighthood as a protest against

- A Jallianwala Bagh massacre
- B Partition of Bengal
- C Execution of Chapekar brothers
- D Simon Commission

Answer: A

Question 68

Who popularised the slogan 'Jai Jawan, Jai Kisan' and 'Jai Hind' in all platforms?

- A Jawaharlal Nehru
- B Indira Gandhi
- C Lal Bahadur Shastri
- D Morarji Desai

Answer: C

Question 69

Rings of Saturn are made up of

- A ice
- B dust

C gas

D rock

Answer: A

Question 70

What is the name of Bhramaputra river in Tibet?

A Dihang

B Dibang

C Lohit

D Tsangpo

Answer: D

Question 71

Which one of the following is referred to as the 'Gold mine of timber' ?

A AndamanIslands

B Lakshadweep Islands

C Meghalaya

D Tripura

Answer: A

Question 72

The world's highest road from Manali to Leh has been constructed at an average height of

A 4000m

B 4500m

C 6230m

D 5300m

Answer: A

Question 73

The raw material for makingartificial silk is

A Wool

B Cellulose

C Silk

D Lines

Answer: B

Question 74

The plant which flowers outside and fruit development occurs inside the soil is

- A Groundnut
- B Cluster bean
- C Soyabean
- D Chick pea

Answer: A

Question 75

The largest flower in the world is

- A Orchid
- B Rafflesia
- C Sunflower
- D Musa

Answer: B

Question 76

The number of teeth which grow twice are

- A 08
- B 12
- C 14
- D 20

Answer: D

Question 77

Which of the following diseases is not a water-borne disease ?

- A Cholera
- B Typhoid
- C Asthma
- D Amoebic dysentery

Answer: C

Question 78

Name the bird which can fly backward.

- A Albatross
- B Crane

C Hummingbird

D Penguin

Answer: C

Question 79

"ECOMARC which is granted to a product having no harmful effect on the environment has a mark of

A Sun behind mountains

B Lotus flower in full bloom

C River flowing in mountains

D A tilted Pot on ground

Answer: D

Question 80

Which of the following is used to disinfect water in a non-chemical way ?

A Chlorine dioxide

B Ultraviolet light

C Ozone

D Chloramine

Answer: B

Question 81

According to a decision notified by the finance minister, coins of all denominations below 50 paise coin will cease to be legal currency from the date

A March 31, 2011

B June 30, 2011

C September 30, 2011

D December 31, 2011

Answer: B

Question 82

A bird sitting on a live wire does not get electrocuted because

A no current flows through it

B bird is light

C bird has no resistance

D bird has high resistance

Answer: A

Question 83

Apparent brightness of diamonds due to

- A reflection of light
- B refraction of light
- C total internal reflection
- D scattering of light

Answer: C

Question 84

Which of these is a component of a presentation graphics software ?

- A Page
- B Worksheet
- C Slide
- D Table

Answer: C

Question 85

The main aim of using information technology in business is

- A use the latest technology
- B improve business processes
- C transfer the duty of decision making to the computing system
- D increase the speed of the transactions

Answer: B

Question 86

The aviation fuel used in jet engines is

- A Coal gas
- B Refined kerosene
- C Petrol
- D Diesel

Answer: B

Question 87

The inert gas produced in the nuclear fusion process is

- A Helium
- B Argon

C Neon

D Krypton

Answer: A

Question 88

Which of the following is referred to as a breathing molecule in plants ?

A Chlorophyll

B Myoglobin

C Nitrogenase

D Haemoglobin

Answer: A

Question 89

Ethyleneglycol is used in car radiators to

A facilitate evaporation of water

B lower the evaporation of water

C lower the freezing point of water

D lower the viscosity of water in the radiator

Answer: C

Question 90

Ganga action plan was initiated in

A 1982

B 1986

C 1989

D 1984

Answer: B

Question 91

In 1987 use of ozone degrading chemicals was banned in the convention held at

A Rio de Janeiro

B Montreal

C Chicago

D Delhi

Answer: B

Question 92

Which one of the following is not included in the list of the new seven wonders of the world announced in Lisbon, the capital of Portugal, on July 7, 2007 ?

- A Taj Mahal of India
- B Petra (Jordan)
- C The Hanging Garden of Babylon
- D Machu Picchu (Peru)

Answer: C

Question 93

India's intercontinental Ballistic missile AgniV, proposed to be tested in the year 2011, will have a range of

- A over 4500kms
- B Over 5000 kms
- C over 5500 kms
- D over 6000 kms

Answer: C

Question 94

The first Indian to win the Hoover Medal is

- A Dr. Manmohan Singh
- B Dr. Montek Singh Ahluwala
- C Dr. Amartya Sen
- D Dr. APJ. Abdul Kalam

Answer: D

Question 95

A.P.J. Abdul Kalam has co-authored a book with a Jain Monk. The title of the book is

- A Branding India : An Incredible Story
- B The Family and the Nation
- C Getting a Grip on MyBody, My Mind, My Self
- D A Better India, A Better World

Answer: B

Question 96

Which one of the following India's World Heritage Sites included in UNESCO's list has not been matched correctly with its location ?

- A Humayun's Tomb - Delhi

- B Valley of Flowers - Uttarakhand
- C Airavatesvara Temple - Karnataka
- D Manas Wildlife Sanctuary - Assam

Answer: C

Question 97

Who of the following is not associated with Carnatic music ?

- A Tygaraja
- B Muthuswami Dikshitar
- C Bhatkhande
- D Shyam Shashtri

Answer: C

Question 98

At the 57th National Film Awards for 2009 in Delhi on September 15, 2010, separate awards were announced for Best Feature Film on 'National Integration' and Best Film on 'Other Social Issues'. Which film was adjudged as the Best Film on Other Social Issues?

- A Paa
- B Delhi-6
- C Well Done Abba
- D Lahore

Answer: C

Question 99

Who of the following got gold in Women's Freestyle Wrestling (59 kg) in the XIX Commonwealth Games 2010 held at Delhi?

- A Anita
- B Alka Tumar
- C Geeta Devi
- D Deepika Kumari

Answer: B

Question 100

As per the decision of the Olympic Council of Asia (OCA) and the Incheon Asian Games Organising Committee (IAGOC), two games to be retained / included in the next edition of the Asian Games in 2014 are

- A Cricket and Kabaddi
- B Chess and Cricket
- C Chess and Kabaddi

D Cue Sports and Cricket

Answer: A

General Engineering (Civil & Structural)

Instructions

For the following questions answer them individually

Question 101

The volume of one bag of cement is

A 0.0214 cu.m

B 0.0347 cu.m

C 0.0434 cu.m

D 0.0609 cu.m

Answer: B

Question 102

If t is the thickness of MS plate in mm, the standard weight (in kg) of the MS plate per sq. metre is

A 5.87t

B 7.85t

C 8.75t

D 8.57t

Answer: B

Question 103

For one cubic metre of concrete (1:2: 4), the number of cement bags required is

A 4.5

B 5.0

C 5.3

D 6.3

Answer: D

Question 104

The commonly used lime in white washing is

A quick lime

B fat lime

C lean lime

D hydraulic lime

Answer: B

Question 105

Crushing strength of a good building stone should be more than

- A 50 MPa
- B 100 MPa
- C 150 MPa
- D 200 MPa

Answer: B

Question 106

Kingclosers are related to

- A doors and windows
- B King Post truss
- C Queen Post truss
- D brick masonry

Answer: D

Question 107

The correction in elevation due to curvature and refraction is proportional to

- A $\frac{D}{R}$
- B $\frac{D^2}{R}$
- C $\frac{R}{D^2}$
- D $\frac{R}{D}$

Answer: B

Question 108

Relative density of a compacted dense sand is approximately equal to

- A 0.4
- B 0.6
- C 0.95
- D 1.20

Answer: C

Question 109

Relationship between dry density γ percentage air voids n_a , water content ω and specific gravity G of any soil is

A $\gamma_d = \frac{(1+n_a)Gr_w}{1+wG}$

B $\gamma_d = \frac{(1+n_a)Gr_w}{1-wG}$

C $\gamma_d = \frac{(1-n_a)Gr_w}{1+wG}$

D $\gamma_d = \frac{(1-n_a)Gr_w}{1-wG}$

Answer: C

Question 110

The correction for slope in chaining is proportional to

A \sqrt{h}

B h

C h^2

D h^3

Answer: C

Question 111

The fixed point whose elevation is known, is called

A benchmark

B change point

C reduced level

D station

Answer: A

Question 112

When the flow in an open channel is gradually varied, the flow is said to be

A steady uniform flow

B steady non-uniform flow

C unsteady uniform flow

D unsteady non-uniform flow

Answer: B

Question 113

Which of the following is a non-recording rain gauge ?

A Symon's rain gauge

B Tipping bucket type rain gauge

- C Weighing type raingauge
- D Floating type raingauge

Answer: A

Question 114

The discharge capacity required at the outlet to irrigate 2600 ha of sugarcane having a kor depth of 17 cm and a kor period of 30 days is

- A 2.3 m³/s
- B 1.71 m³/s
- C 14.7 m³/s
- D 0.18 m³/s

Answer: B

Question 115

Lining of irrigation canals

- A decreases the waterlogging area
- B increases the waterlogging area
- C does not change the waterlogging area
- D increases evaporation

Answer: A

Question 116

A shallow foundation is defined as a foundation which

- A has low bearing capacity
- B has a depth of embedment less than its width
- C is resting on the ground surface
- D causes less settlement

Answer: B

Question 117

Match List I with List II and select the correct answer using the codes given below list:

List-I

(Name of person)

- A. Stokes
- B. Darcy
- C. Poiseuille
- D. Atterberg

List-II

(Field of contribution)

1. Flow through capillary
2. Classification of soils
3. Consistency limits
4. Flow of water through a soil mass
5. Velocity of settling particle

A A-5, B-4, C-1, D-3

B A-4, B-1, C-5, D-2

C A-1, B-5, C-4, D-2

D A-3, B-2, C-1, D-5

Answer: A

Question 118

The pressure intensity in kg/cm² at any point in a liquid is

A w

B $\frac{W}{h}$

C $\frac{h}{w}$

D wh

Answer: D

Question 119

Venturimeter is used to

A measure the velocity of a flowing liquid

B measure the pressure of a flowing liquid

C measure the discharge of liquid flowing through a pipe

D measure the pressure difference of liquid flowing between two points in a pipe line

Answer: C

Question 120

Hardness of water is caused by the presence of the following in water:

A Chlorides and sulphates

B Calcium and magnesium

C Nitrites and nitrates

D Sodium and potassium

Answer: B

Question 121

In CBR test, the value of CBR is calculated at

A 2.5 mm penetration only

B 5.0 mm penetration only

C 7.5 mm penetration only

D both 2.5mm and 5.0 mm penetrations

Answer: D

Question 122

The camber for hill roads in case of bituminous surfacing is adopted as

A 2.0%

B 2.5%

C 3.0%

D 3.5%

Answer: B

Question 123

Minimum depth of ballast cushion for a Broad Gauge wooden sleeper of size $275 \times 25 \times 13$ cm with 75 cm sleeper spacing is

A 15 cm

B 20 cm,

C 25 cm

D 30 cm

Answer: C

Question 124

The product of H^+ ions and OH^- ions in a strong alkali is

A 0

B 1

C 10^{-1}

D 10^{-14}

Answer: D

Question 125

The minimum dissolved oxygen which should always be present in water in order to save the aquatic life is

A 1 ppm

B 4 ppm

C 10 ppm

D 40 ppm

Answer: B

Question 126

The ratio of normal stress to volumetric strain is defined as

- A Young's modulus
- B Bulk modulus
- C Rigidity modulus
- D Tangent modulus

Answer: B

Question 127

The ratio of flexural rigidity of a beam $(b \times d)$ to another one $(b \times 2d)$ of similar material will be

- A $\frac{1}{2}$
- B $\frac{1}{4}$
- C $\frac{1}{8}$
- D $\frac{1}{18}$

Answer: C

Question 128

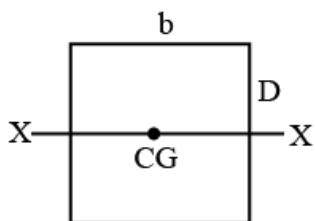
A material is called ductile if it

- A has little plastic elongation range
- B has long plastic elongation range
- C could be hammered into a very thin sheet
- D shows large elastic strain

Answer: B

Question 129

The moment of inertia of the cross-section about X-X axis is



- A $\frac{D^3 b}{3}$
- B $\frac{D^3 b}{12}$
- C $\frac{D b^3}{3}$
- D $\frac{D b^3}{12}$

Answer: B

Question 130

Poisson's ratio is defined as

- A longitudinal strain / lateral strain
- B lateral strain / longitudinal strain
- C lateral strain \times longitudinal strain
- D $\frac{1}{2}$ (lateral strain) \times (longitudinal strain)

Answer: B

Question 131

Le-Chatelier's method can be used to determine

- A Fineness of cement
- B Fineness of aggregate
- C Soundness of cement
- D Compressive strength of cement

Answer: C

Question 132

Grading of aggregate in a concrete mix is necessary to achieve

- A adequate workability
- B higher density
- C reduction of voids
- D better durability

Answer: B

Question 133

The purpose of concrete compaction is to

- A increase the density
- B increase the weight
- C increase the voids
- D decrease the setting time

Answer: B

Question 134

The test strength of the sample is taken as the average of the strength of

- A 2 specimens
- B 3 specimens

C 4 specimens

D 5 specimens

Answer: B

Question 135

An aggregate is said to be flaky if its least dimension is less than

A $\frac{2}{3}$ mean dimension

B $\frac{3}{4}$ mean dimension

C $\frac{3}{5}$ mean dimension

D $\frac{5}{8}$ mean dimension

Answer: C

Question 136

The deflection of beam is reduced by

A increase depth of the section

B increase depth of end restraint

C increase width of the section

D any one or all of the above

Answer: A

Question 137

Modulus of rigidity is expressed as

A compressive stress / compressive strain

B tensile stress / tensile strain

C shear stress / shear strain

D stress / volumetric strain

Answer: C

Question 138

For a rectangular beam, the maximum shear stress is related to average shear stress, τ_{av} , by

A τ_{av}

B $1.25 \tau_{av}$

C $1.50 \tau_{av}$

D $1.75 \tau_{av}$

Answer: C

Question 139

The standard consistency test is done in a

- A Blaine's apparatus
- B Le-Chatleir's apparatus
- C Vane apparatus
- D Vicat's apparatus

Answer: D

Question 140

The Static modulus of elasticity (E_c) of the concrete for the short term loading may be derived as

- A $E_c = 4800\sqrt{f_{ck}}$
- B $E_c = 5000\sqrt{f_{ck}}$
- C $E_c = 5200\sqrt{f_{ck}}$
- D $E_c = 5500\sqrt{f_{ck}}$

Answer: B

Question 141

In limit state of collapse against flexure, the maximum strain in tension reinforcement at failure shall not be less than

- A 0.002
- B $0.002 + \frac{f_y}{E_s}$
- C $0.002 + 0.87\frac{f_y}{E_s}$
- D $0.002 + 1.15\frac{f_y}{E_s}$

Answer: D

Question 142

Aslab is designed as a two-wayslab if the ratio of long span to short span is greater than

- A 1.0
- B 1.2
- C 1.5
- D 2.0

Answer: E

Question 143

According to IS 456: 2000, the maximum depth of stress block for balanced section of beam of effective depth d using steel with $f_y = 250$, is given by

- A 0.43 d
- B 0.53 d
- C 0.68 d
- D 0.73 d

Answer: B

Question 144

If ϕ is the diameter of a bar in tension, a standard hook is equivalent to the anchorage value of straight length given by

- A 8ϕ
- B 12ϕ
- C 16ϕ
- D 24ϕ

Answer: C

Question 145

. The HYSD reinforcement in RC slab shall not be less than

- A $\frac{0.12(bd)}{100}$
- B $\frac{0.12(bD)}{100}$
- C $\frac{0.15(bd)}{100}$
- D $\frac{0.15(bD)}{100}$

Answer: B

Question 146

The maximum allowable slenderness ratio for axially loaded member carrying tension only is

- A 180
- B 250
- C 350
- D 400

Answer: D

Question 147

A strut is a

- A tension member
- B compression member

C flexural member

D torsion member

Answer: B

Question 148

The effective slenderness ratio of laced columns, compared to actual maximum slenderness ratio shall be considered as

A 1.05 times

B 1.10 times

C 1.15 times

D 1.20 times

Answer: A

Question 149

According to Unwin's formula, the relation between diameter of rivet hole (d) in mm, and thickness of plate (t) in mm is given by

A $d = t$

B $d = 6.01\sqrt{t}$

C $d = 2t$

D $d = 2.6\sqrt{t}$

Answer: B

Question 150

The lacing bars in steel columns should be designed to resist

A 0.5% of column load

B 1.5% of column load

C 2.5% of column load

D 3.5% of column load

Answer: C