



SSC JE Civil Engineering 23rd Jan 2018 Shift-1

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General Intelligence and Reasoning

Instructions

In the following question, select the related word pair from the given alternatives

Question 1

Red : Colour :: ? : ?

- A Sun : Heat
- B Earth : Planet
- C Land : Solid
- D Water : Drink

Answer: B

Question 2

Square : Four :: ? : ?

- A Rectangle : Five
- B Hexagon : Seven
- C Rhombus : Six
- D Triangle : Three

Answer: D

Question 3

Forest : Trees :: Book : ?

- A Pages
- B Bind
- C Writer
- D Pen

Answer: A

Question 4

TRAP : YWFU :: FROG : ?

- A KHLG
- B KWTL
- C WKLH
- D FGHL

Answer: C

Question 5

FAN : MZU :: LIP : ?

- A FGA
- B KRO
- C ANP
- D TSQ

Answer: B

Question 6

AM : FR :: LQ : ?

- A HQ
- B NP
- C QV
- D LS

Answer: C

Instructions

In the following question, select the related number from the given alternatives.

Question 7

46 : 24 :: 54 : ?

- A 30
- B 24
- C 20
- D 36

Answer: C

Question 8

11 : 24 :: 23 : ?

- A 42
- B 36
- C 54
- D 58

Answer: B

Question 9

5 : 15 :: 7 : ?

- A 28
- B 21

C 37

D 25

Answer: B

Instructions

In the following question, select the odd word from the given alternatives.

Question 10

A Pen - Write

B Ball - Play

C Food - Eat

D Pencil - Stationery

Answer: D

Question 11

A Road

B Truck

C Car

D Scooter

Answer: A

Question 12

A Rice

B Wheat

C Maize

D Crop

Answer: D

Question 13

A GJM

B HKN

C MPS

D NQU

Answer: D

Question 14

A LQVA

B AFKQ

C CHMR

D MRWB

Answer: B

Question 15

A VRNJ

B CYUQ

C KGCX

D SOKG

Answer: C

Question 16

A 2 - 12

B 5 - 28

C 4 - 24

D 3 - 18

Answer: B

Question 17

A 11 - 13

B 13 - 17

C 17 - 19

D 11 - 15

Answer: D

Question 18

A 4 - 12

B 5 - 15

C 6 - 18

D 9 - 29

Answer: D

Instructions

For the following questions answer them individually

Question 19

Arrange the given words in the sequence in which they occur in the dictionary.

1. Series
2. Singing
3. Secure
4. Sickle
5. Secured

- A 35142
B 53142
C 35124
D 53124

Answer: A

Question 20

Arrange the given words in the sequence in which they occur in the dictionary.

1. Drive
2. Drown
3. Drain
4. Drink
5. Drama

- A 35421
B 35412
C 35214
D 35241

Answer: B

Question 21

Arrange the given words in the sequence in which they occur in the dictionary.

1. Price
2. Prize
3. Police
4. Paint
5. Prawn

- A 45123
B 45213
C 43521
D 43512

Answer: D

Question 22

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series
AG, FM, KS, PY, ?

- A RM
- B UE
- C JQ
- D YA

Answer: B

Question 23

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
ALK, VGF, QBA, ?, GRQ

- A KST
- B ARP
- C CXD
- D LWV

Answer: D

Question 24

A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.
KPD, QVJ, WBP, CHV, ?

- A INB
- B GXF
- C ICM
- D ZDQ

Answer: A

Question 25

In the following question, select the missing number from the given alternatives.
3, 7, 11, 63, 27, 215, ?, ?

- A 47, 513
- B 51, 511
- C 51, 513
- D 47, 511

Answer: B

Question 26

In the following question, select the missing number from the given alternatives.
18, 45, 112.5, ?, 703.125

- A 217.5

B 262.25

C 281.25

D 273.75

Answer: C

Question 27

In the following question, select the missing number from the given alternatives.

30, 68, 130, 222, 350, ?

A 504

B 520

C 476

D 448

Answer: B

Question 28

Seg CD is shorter than Seg MN, Seg MN is shorter than Seg TR, Seg AB is shorter than Seg CD and Seg MN is shorter than Seg PQ. Which segment is the shortest?

A CD

B MN

C PQ

D AB

Answer: D

Question 29

A is B's father's father's daughter-in-law's daughter. If B's father has no brother then how is A related to B?

A grand-daughter

B daughter

C mother

D sister

Answer: D

Question 30

From the given alternative words select the word which cannot be formed using the letters of the given word.

RECUPERATE

A acute

B trace

C price

D erupt

Answer: C

Question 31

If TUESDAY is coded as VWGUFGA, then how will COW be coded as?

A EQY

B XLD

C BNV

D DPX

Answer: A

Question 32

In a certain code language, 2369 means 'master class is fun', 9527 means 'act is class apart' and 1349 means 'we have fun class'. Find the code for 'fun'.

A 2

B 6

C 3

D 9

Answer: C

Question 33

In a certain code language, '+' represents '-', '-' represents 'x', 'x' represents '÷' and '÷' represents '+'. Find out the answer to the following question.

$$16 - 25 \times 40 \div 60 + 15 = ?$$

A 14

B 72

C 55

D 63

Answer: C

Question 34

If $72 \$ 20 = 46$ and $1 \$ 27 = 14$ then find the value of $10 \$ 44 = ?$

A 34

B 54

C 27

D 17

Answer: C

Question 35

If A \$ B means A is son of B, A # B means A is brother of B and If A * B means A is father of B, then what does P # Q \$ R * S mean?

- A P is father of S
- B P is father's father of S
- C P is brother of S
- D P is son of S

Answer: C

Question 36

Select the missing number from the given responses?

7	4	2
6	?	5
1	-6	-3

- A 2
- B 11
- C 1
- D 10

Answer: D

Question 37

Which of the following terms follows the trend of the given list?

AAAAAABA, AAAAAAAB, BAAAAAAA, ABAAAAAA, AABAAAAA, _____.

- A AAAAAABA
- B AAABAAAA
- C AAAABAAA
- D AAAAABAA

Answer: C

Question 38

A Shopping mall worker loads his trolley and walks 50 m through an alley which is going North, then he turns to his left and walks 15 m, then he turns South and walks another 15 m, then he turns East and walks 25 m and then he turns south and walks 35 m. Where is he now with reference to his starting position?

- A 10 m West
- B 10 m East
- C 40 m East
- D 40 m West

Answer: B

Question 39

Two battle tanks start from the same point. Tank A travels 12 km South, then turns to its left and travels 7 km. Tank B travels 7 km South, then turns West and travels 9 km, then turns to its left and travels 5 km. Where is tank A with respect to tank B?

- A 16 km West
- B 2 km East
- C 2 km West
- D 16 km East

Answer: D

Question 40

In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statement I: No cats are dogs

Statement II: Some cats are carnivores

Conclusion I: All dogs are carnivores

Conclusion II: All carnivores are dogs

- A Only conclusion I follows
- B Only conclusion II follows
- C Both conclusions I and II follow
- D Neither conclusion I nor conclusion II follows

Answer: D

Question 41

In the question three statements are given, followed by three conclusions, I, II and III. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements

Statement I: No bronze is copper

Statement II: Some alloy is bronze

Statement III: Some zinc is alloy

Conclusion I: Some zinc is bronze

Conclusion II: Some copper is zinc

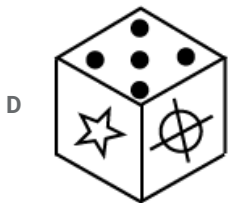
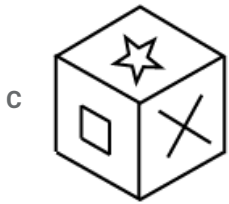
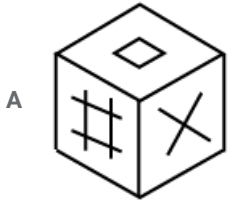
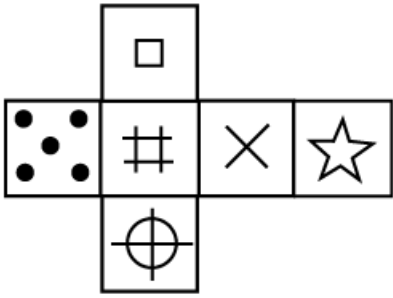
Conclusion III: some alloy is copper

- A Only conclusions I and II follow
- B Only conclusions II and III follow
- C All conclusions I, II and III follow
- D None of the conclusions follow

Answer: D

Question 42

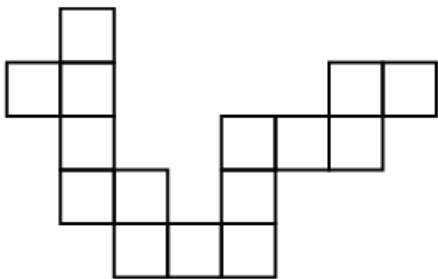
Which of the following cube in the answer figure can not be made based on the unfolded cube in the question figure ?

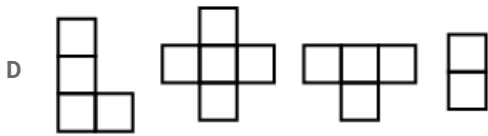
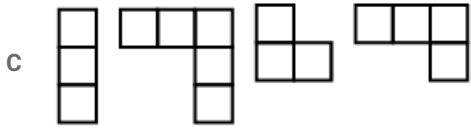
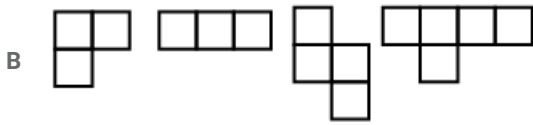
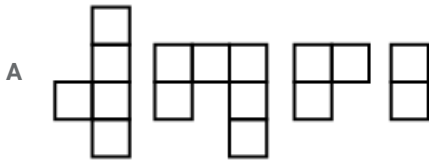


Answer: B

Question 43

Which of the following answer figure patterns can be combined to make the question figure?

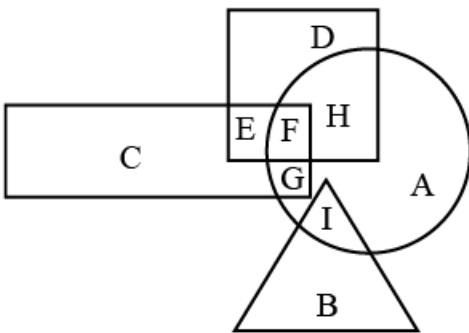




Answer: B

Question 44

In the following figure square represents astronauts, triangle represent swimmers, circle represents women and rectangle represents Indians. Which set of letter represents women who are either astronauts or swimmer ?

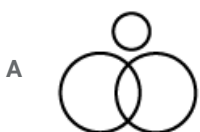


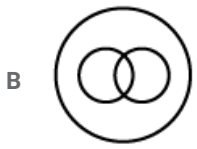
- A FHGI
- B DEIA
- C IBFG
- D FHI

Answer: D

Question 45

which of the following represents relation ship between pencils and pens and writing instruments?

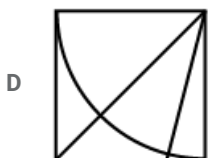
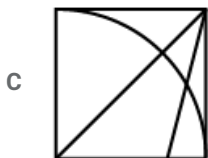
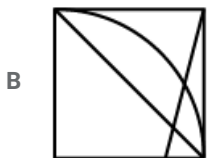
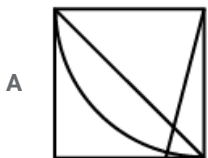
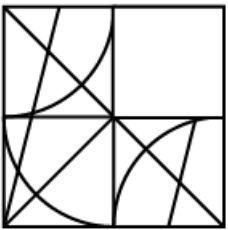




Answer: C

Question 46

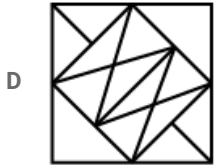
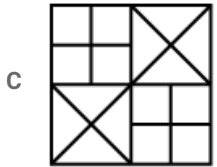
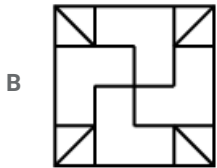
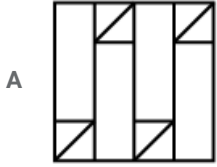
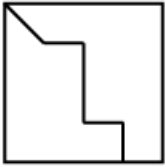
which of the following pattern will complete the pattern in the question figure?



Answer: C

Question 47

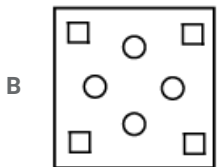
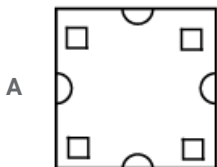
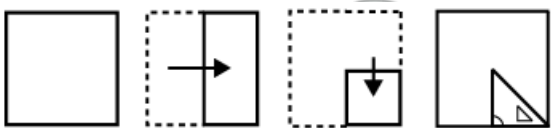
From the given answer figures ,select the one in which the question figure is hidden /embedded.

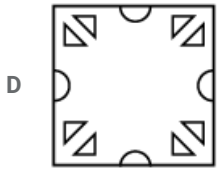
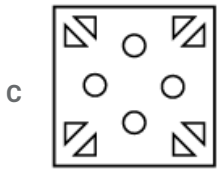


Answer: B

Question 48

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

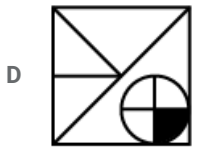
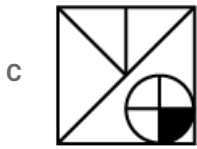
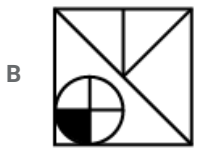
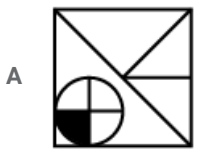
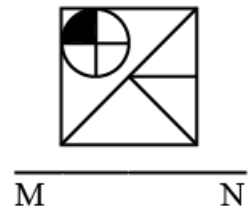




Answer: D

Question 49

If the mirror is placed on the line MN, then which of the following answer figures in the right image of the given figure?



Answer: B

Question 50

A word is represented by only one set of numbers as given in any one of the alternatives. The set of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The column and rows of Matrix-1 are numbered from 0 to 4 and that of Matrix-II is numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column. For c can be represented by 76,89 etc, similarly you have to identify set for the word 'SODA'

Matrix I					
	0	1	2	3	4
0	J	G	J	A	H
1	B	A	D	B	L
2	B	D	A	F	L
3	L	C	G	B	B
4	B	K	B	C	B

Matrix II					
	5	6	7	8	9
5	S	Q	R	T	X
6	S	T	T	U	O
7	T	W	W	S	T
8	Q	R	O	T	W
9	Q	P	T	S	X

- A 65,85,21,40
- B 78,87,12,03
- C 55,67,12,33
- D 98,69,22,14

Answer: B

General Awareness

Instructions

For the following questions answer them individually

Question 51

By what name is the BRICS bank presently known?

- A BRICS Development Bank
- B Afro-Asia Development Bank
- C New Development Bank
- D No option is correct

Answer: C

Question 52

What does parallel economy mean?

- A Black Money
- B Parallel Business
- C Illegal Economy
- D No option is correct

Answer: A

Question 53

Who implements monetary policy in India?

- A NITI Aayog
- B RBI
- C Ministry of Finance
- D Parliament

Answer: B

Question 54

The ARDC is a branch of the NABARD. What is the full form of ARDC?

- A Agricultural Research and Development Corporation
- B Agriculture and River Development Cooperation
- C Agricultural Reform and Development Cooperation
- D Agricultural Refinance and Development Corporation

Answer: C

Question 55

Which of the following is a part of machinery that settles industrial disputes?

- A Labour Court
- B Industrial Tribunal
- C Work Committee
- D All options are correct

Answer: D

Question 56

In which year Nagaland was created as separate state?

- A 1961
- B 1962
- C 1963
- D 1964

Answer: C

Question 57

Which one of the following is responsible for the preparation and presentation of Union Budget?

- A Department of Economic Affairs
- B Department of Revenue
- C Department of Expenditure

D No option is correct.

Answer: A

Question 58

Who presided over the inaugural meeting of the Constituent Assembly of India?

A Dr Rajendra Prasad Sardar Patel

B Dr Sachchidanand Sinha

C B R Ambedkar

D Sardar Patel

Answer: B

Question 59

Which of the following was not adopted from the Maurya Dynasty in the emblem of Government of India?

A Satyameva Jayate

B Bull

C Horse

D Four Lions

Answer: A

Question 60

The first session of Constituent Assembly of India was held in which of the following cities?

A Bombay

B Madras

C Calcutta

D Delhi

Answer: D

Question 61

Which of the following is the best example of Vijaynagar Art?

A Ajanta

B Hampi

C Puri

D Sanchi

Answer: B

Question 62

Taxila was capital of which among the 16 Mahajanpadas?

- A Kosala
- B Kuru
- C Vajji
- D Gandhara

Answer: D

Question 63

Who was founder of Mughal Empire in India?

- A Babur
- B Humayun
- C Akbar
- D Jahangir

Answer: A

Question 64

Where did Vasco da Gama arrive in India in 1498?

- A Madras
- B Calcutta
- C Calicut
- D Bombay

Answer: C

Question 65

According to the treaty of Srirangapattanam, which of the following was ceded to the British?

- A Mysore
- B Hampi
- C Kannur
- D Malabar

Answer: D

Question 66

By what name is the Ganga known in Bangladesh?

- A Padma
- B Ganga
- C Damodar

D Meghna

Answer: A

Question 67

Which of the following are not kharif crops?

A Maize and Rice

B Arhar and Soyabean

C Wheat and Barley

D Ragi and Groundnut

Answer: C

Question 68

How many seismic stations are required to locate the epicentre of an earthquake?

A 3

B 4

C 5

D 6

Answer: A

Question 69

Madhya Pradesh shares its border with how many States?

A 5

B 4

C 6

D 3

Answer: A

Question 70

Palghat joins which of the following states?

A Goa and Maharashtra

B Kerala and Karnataka

C Tamil Nadu and Kerala

D Mizoram and Manipur

Answer: C

Question 71

Which of the following authorities regulates NPS?

- A IRDA
- B PFRDA
- C CAG
- D SEBI

Answer: B

Question 72

Which of the following is a centrally sponsored scheme to empower adolescent girls?

- A SAKSHAM
- B ABLA
- C SABLA
- D BBBPS

Answer: C

Question 73

Which among the following has inscribed Kumbh Mela on the Representative List of Intangible Cultural Heritage of Humanity?

- A WHO
- B UNCTAD
- C ADB
- D UNESCO

Answer: D

Question 74

Who has been appointed as the General Manager of Board of Control for Cricket in India?

- A MV Sridhar
- B Saba Karim
- C Rahul Johri
- D Anurag Thakur

Answer: B

Question 75

FIFA World Cup 2022 will be held in which country?

- A Russia
- B Spain
- C Ukrain

D Qatar

Answer: D

Question 76

The Idea of Justice" is written by _____.

A Ravindra Singh

B Mamta Banerjee

C Amartya Sen

D Abhinav Bindra

Answer: C

Question 77

Which author has been made Companion of Honour on December 12, 2017?

A J. K. Rowling

B Roald Dahl

C Charlotte Bronte

D Jane Austen

Answer: A

Question 78

31st Surajkund International Crafts Mela has begun at which of the following city?

A Faridabad

B Jaipur

C New Delhi

D Jaisalmer

Answer: A

Question 79

ONGC Videsh has got a two year extension to explore which country's Oil block-128 in the south China sea?

A Cambodia

B Vietnam

C Taiwan

D Philippines

Answer: B

Question 80

The 5th India-Sri Lanka joint training exercise "Mitra Shakti 2017" was held in which state of India?

- A New Delhi
- B Tamil Nadu
- C Maharashtra
- D West Bengal

Answer: C

Question 81

BIOS is a _____.

- I. non-volatile firmware
- II. Volatile firmware
- III. Software stored on a small memory chip on motherboard

- A Only I
- B Only II
- C Only I and III
- D Only II and III

Answer: C

Question 82

Which of the following is TRUE?

- A Primary memory is non-volatile.
- B Secondary memory is volatile
- C ROM is non-volatile memory.
- D RAM is non-volatile memory

Answer: C

Question 83

Which of the following metal remains in liquid form at room temperature?

- A Cadmium
- B Mercury
- C Germanium
- D Tin

Answer: B

Question 84

Aqua regia is a mixture of _____.

- A dilute hydrochloric acid and concentrated nitric acid
- B dilute sulfuric acid and dilute hydrochloric acid

- C Concentrated sulfuric acid and dilute nitric acid.
- D concentrated hydrochloric acid and concentrated nitric acid

Answer: A

Question 85

In a concave mirror if object is placed at centre of curvature, then image will be _____.

- A virtual
- B erect
- C diminished
- D at the centre of curvature

Answer: D

Question 86

What is the mass of 4 mole of aluminium atoms?

- A 120 grams
- B 108 grams
- C 136 grams
- D 140 grams

Answer: B

Question 87

Which of the following particles were made to fall on a thin gold foil by Ernest Rutherford?

- A Gamma
- B Beta
- C Electron
- D Alpha

Answer: D

Question 88

Which of the following statement(s) is/are TRUE?

- I. Fuse is generally placed in series with the device.
- II. Fuse is generally placed in parallel with the device.
- III. Fuse wire has high melting point.

- A Only I
- B Only II
- C Only I and III
- D Only II and III

Answer: A

Question 89

A rectangular coil of copper wire is rotating in a magnetic field. The direction of the induced current changes once in each?

- A Two revolutions
- B One revolution
- C Half revolution
- D One fourth revolution

Answer: C

Question 90

Noise is measured in which unit?

- A Watt
- B Faraday
- C Pascal
- D Decibel

Answer: D

Question 91

Which of the following vitamin helps in clotting of blood?

- A Vitamin A
- B Vitamin B
- C Vitamin D
- D Vitamin K

Answer: D

Question 92

During heavy exercise, breathing rate in an average adult person can increase upto _____ per minute

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

Answer: C

Question 93

Why is the colour of human blood red?

- A Because of myoglobin
- B Because of haemoglobin
- C Because of immunoglobulin
- D Because of heptoglobin

Answer: B

Question 94

Which of the following statement is INCORRECT?

- A Oviparous animal does not give birth to young ones.
- B Each sperm is a single cell
- C External fertilisation takes place in frog
- D Fertilisation is necessary even in asexual reproduction

Answer: D

Question 95

What is the cause of arise of myopia?

- A Excessive curvature of the eye lens.
- B Eye ball becomes too small.
- C Focal length of the eye lens becomes too long.
- D Lack of sleep

Answer: A

Question 96

Which of the following multiplies very slowly in comparison to others?

- A Bacteria
- B Virus
- C Fungi
- D Worms

Answer: D

Question 97

The accumulation of non-degradable chemicals progressively at each trophic level is called _____.

- A biological magnification
- B chemical magnification
- C residue magnification

D No option is correct.

Answer: A

Question 98

Why Taj Mahal is suffering from "Marble Cancer"?

- A Because of sulphur dioxide
- B Because of nitrogen dioxide
- C Because of chlorofluorocarbon
- D Because of carbon dioxide

Answer: D

Question 99

Cancer treatment is done by which of the following noble gas?

- A Helium
- B Radon
- C Krypton
- D Neon

Answer: B

Question 100

How many types of ecological pyramids are present in ecosystem?

- A Two
- B Three
- C Four
- D Five

Answer: B

General Engineering (Civil & Structural)

Instructions

For the following questions answer them individually

Question 101

Which one of the following brick is suitable for the high-class brick masonry?

- A Bull nose bricks
- B Jhumb bricks
- C Modular bricks
- D Under burnt bricks

Answer: C

Question 102

Which of the following is the correct reason for soaking the brick in water before its use?

- A For preventing adsorption of moisture from mortar by bricks
- B For reducing air void
- C For reducing efflorescence
- D For cleaning

Answer: A

Question 103

Which of the following compound affects the ultimate strength of cement?

- A Dicalcium silicate
- B Tetracalcium aluminoferrite
- C Tricalcium aluminate
- D Tricalcium silicate

Answer: A

Question 104

Refractory bricks are generally used to resist _____.

- A chemical action
- B dampness
- C high temperature
- D weathering action

Answer: C

Question 105

Which of the following is the correct percentage of maximum moisture content based in sand where change in volume is maximum?

- A 5%
- B 9%
- C 12%
- D 15%

Answer: A

Question 106

Which one of the following cement is best for the marine works?

- A Blast furnace slag cement
- B High alumina cement
- C Low heat Portland cement
- D Rapid hardening cement

Answer: A

Question 107

Which of the following is limit of the moisture content that can be achieved in the air drying process of timber?

- A 10%
- B 15%
- C 20%
- D 28%

Answer: B

Question 108

Which of the following proportion of cement and standard sand is used in cement mortar while testing the compressive and tensile strength of cement?

- A 1:2
- B 1:3
- C 1:4
- D 1:6

Answer: B

Question 109

Which of the following is the important factor that affects the shrinkage of cement concrete?

- A Quantity of cement
- B Size of coarse aggregates
- C Size of the fine aggregate
- D Amount of water added during mixing of concrete

Answer: D

Question 110

Calculate the proportion (in percentage) of fine aggregate in combined aggregate so that the fineness modulus of the combined aggregate becomes 6.4. The fineness modulus of coarse aggregate and fine aggregate in the concrete mix is 7.6 and 2.8 respectively

- A 20
- B 33.33

C 35

D 66.6

Answer: B

Question 111

Which of the following unit is used for estimation of D.P.C. work?

A Number

B Cubic meter

C Running meter

D Square meter

Answer: D

Question 112

Calculate the quantity of the sand required (in cubic meter) in 20 cubic meters of reinforced cement concrete (1 : 2 : 4)

A 2.87

B 4.4

C 5.7

D 8.8

Answer: D

Question 113

Deduction at cross wall for total length of the central line is ____

A half of thickness of wall.

B no deduction.

C thickness of wall

D twice of the thickness of wall

Answer: D

Question 114

Calculate the quantity of the earth works in cubic meter for a canal embankment of 100 m long having cross section areas at the two sections are 20 square meters and 80 square meters. Use trapezoidal method.

A 2000

B 5000

C 7000

D 10000

Answer: B

Question 115

Accuracy in measurement of the area should be ____

- A 1 square centimeter
- B 10 square centimeter
- C 100 square centimeter
- D 1 square meter

Answer: C

Question 116

For estimation of painted area of corrugated asbestos cement sheets, percentage increase in area above the painted area is ____

- A 10%
- B 14%
- C 20%
- D 25%

Answer: C

Question 117

Which of the following is the purpose of the valuation?

- A Approximate estimation of cost
- B Analysis of rate
- C Detailed estimation of cost
- D Taxation

Answer: D

Question 118

An electric generator is installed in the building at a cost of Rs. 50,000. Calculate the annual sinking fund (Rs.) required to be deposited to accumulate the whole amount of 5% compound interest. Assume the life of the electric generator as 10 years.

- A 1535
- B 30695
- C 3975
- D 79503

Answer: C

Question 119

No deduction is made for opening in estimation of masonry work up to _____

- A 1 square centimeter

- B 10 square centimeter
- C 100 square centimeter
- D 1000 square centimeter

Answer: D

Question 120

- Calculate the weight (kg) per meter length of 25 mm diameter steel bar place at a spacing of 250 mm center by center for 1 meter.

- A 0.96
- B 3.85
- C 7.7
- D 15.43

Answer: D

Question 121

Which one is the upper limit of survey area (square kilometer) for use of plane survey?

- A 250
- B 300
- C 350
- D 450

Answer: A

Question 122

Which one is the smallest scale?

- A 1 : 100
- B 1 : 500
- C 1 : 1,000
- D 1 : 2,500

Answer: D

Question 123

A line of true length 398 m when measured by a chain of 20 m chain is recorded to be 400 m. What is the actual length of the chain (in m)?

- A 19.9
- B 20.1
- C 20.4
- D 21.5

Answer: A

Question 124

Calculate the correction for temperature for a tape of length 'L', if the increase in temperature is 'T' above the standard temperature. The coefficient of the temperature for tape material is 'a'.

- A $\frac{aT}{L}$
- B $-\frac{aT}{L}$
- C +aTL
- D -aTL

Answer: C

Question 125

What is the correct sequence of the temporary adjustment of level?

- A Centering, leveling and setting
- B Leveling, setting and centering
- C Setting, centering and leveling
- D Setting, leveling and centering

Answer: C

Question 126

The values of whole circle bearing vary from _____

- A 0° to 90°
- B 0° to 180°
- C 0° to 270°
- D 0° to 360°

Answer: D

Question 127

- Which of the following statement is correct for proper adjustment of the theodolite?

- A Axis of plate level is perpendicular to the horizontal axis
- B Line of collimation is perpendicular to the horizontal axis
- C Line of collimation is parallel to the vertical axis
- D Line of collimation is perpendicular to the vertical axis

Answer: D

Question 128

Which of the followings are correct for sensitivity of the bubble tube?

- A Sensitivity decreases with increase in internal radius of the tube
- B Sensitivity decreases with increase in diameter of the tube
- C Sensitivity increases with decrease in length of the tube
- D Sensitivity increases with decrease in viscosity of the liquid.

Answer: D

Question 129

Calculate the curvature correction (in m) if distance between the instrument and staff is 500 m

- A 0.0196
- B -0.0196
- C 0.0028
- D -0.0028

Answer: B

Question 130

Calculate the volume of the earthwork (in cubic meter) using trapezoidal method if the cross section areas of the three section of embankment at an interval of 20 m are 40 square meters, 50 square meters and 80 square meters.

- A 1067
- B 1700
- C 2200
- D 3200

Answer: C

Question 131

The_____ soil transported by the gravitational forces.

- A alluvial soil
- B colluvial soil
- C loess
- D till

Answer: B

Question 132

Which of the following is determined with the help of pycnometer?

- A Dry density and specific gravity
- B Void ratio and dry density
- C Water content and specific gravity

D Water content and void ratio

Answer: C

Question 133

The cell pressure and pore water pressure is increased from 0.1 N/sq. m to 0.26 N/sq. m and 0.07 N/sq. m to 0.15 N/sq. m respectively in the triaxial test. The Skempton's pore pressure parameter is given by_____.

A -3

B -0.5

C 0.5

D 2

Answer: C

Question 134

Which one of the following shows time factor (approximate), for 50% degree of consolidation?

A 0.2

B 0.5

C 1

D 2

Answer: A

Question 135

Which one of the following is true about ideal fluid?

A It is compressible.

B It is incompressible

C It has high shear force

D It has high value of viscosity.

Answer: B

Question 136

The diameter of droplet is 0.075 mm. What is the intensity of the pressure (N/sq. cm) developed in the droplet by surface tension of 0.000075 N/mm?

A 0.4

B 0.6

C 0.8

D 1

Answer: A

Question 137

- A rectangular block of dimensions 2 m x 1 m x 1 m is floating in the water with immersing depth of 0.5 m. What is the weight of block (kN) if unit weight of water is 10 kN/cubic meter.

- A 5
- B 10
- C 15
- D 20

Answer: B

Question 138

On which principle equation of continuity is based?

- A Conservation of energy
- B Conservation of mass
- C Conservation of momentum
- D All option are correct

Answer: B

Question 139

If Reynolds numbers are 1000,000, then what is the approximate value of friction for the smooth pipe?

- A 0.1
- B 0.01
- C 0.001
- D 0.0001

Answer: B

Question 140

Which one of the following is correct for impulse turbine?

- A Always operates in submerged condition
- B Converts pressure head into velocity with the help of vanes
- C Operates by initial complete conversion to kinetic energy
- D Operates by initial complete conversion to potential energy

Answer: C

Question 141

When the water drawn from the central hole made in wash hand basin, the type of flow of water is ____.

- A forced vortex

- B free vortex
- C tangential flow
- D transitional flow

Answer: B

Question 142

Which of the following turbine is suitable to generate the power of 10,000 hp, working at the speed of 500 rpm under a head of 81 m?

- A Propeller
- B Francis
- C Kaplan
- D Pelton

Answer: B

Question 143

Calculate the specific energy (m-kg/kg) of the flow if the velocity of flow is 2.22 m/s and depth of flow is 1 m

- A 1.25
- B 2.22
- C 3.22
- D 4.22a

Answer: A

Question 144

The sphere of diameter 0.02 m is falls in the fluid of kinematic viscosity 10 stokes with the terminal velocity of 0.02 m/s. What is the value of coefficient of drag on the falling sphere?

- A 40
- B 60
- C 80
- D 100

Answer: B

Question 145

As one moves from head of the canal to the field, the duty of the water _____

- A decreases
- B either increases or decreases
- C increases
- D remains constant

Answer: C

Question 146

Which of the following is the correct assumption of the Kennedy's theory?

- A Shape of regime channel is semicircular
- B Silt is in suspension due to buoyancy force
- C Silt is in suspension due to eddy formed from bottom of channel
- D Silt is in suspension due to eddy formed from wetted perimeter of channel

Answer: C

Question 147

What is the value of the lateral coefficient of the friction as per the IRC?

- A 0.007
- B 0.01
- C 0.15
- D 0.3

Answer: C

Question 148

Calculate the safe stopping sight distance (in m) for the descending gradient of 3% for a design speed of 80 km/h. Take coefficient of friction as 0.35 and total reaction time as 2 seconds.

- A 110.82
- B 123.26
- C 1018.41
- D 1092

Answer: B

Question 149

Which of the following is the minimum limit (ppm) of the dissolved oxygen that must be in the water for survival of aquatic life?

- A 1
- B 4
- C 10
- D 40

Answer: B

Question 150

A stream has flow of 20 cumecs and BOD concentration of 10 mg/l receives the industrial waste water having flow of 1.5 cumecs and BOD concentration of 250 mg/l. What is the BOD concentration (mg/l) of stream at downstream point of meeting of stream with industrial waste?

- A 2.67
- B 12.09
- C 13
- D 26.74

Answer: D

Question 151

A riveted joint may experience

- A shear failure
- B shear failure of plates
- C bearing failure
- D All option are correct

Answer: D

Question 152

If p and d are pitch and gross diameter of rivets, the efficiency (η) of the riveted joint is given by

- A $\eta = \frac{p}{p-d}$
- B $\eta = \frac{p}{p+d}$
- C $\eta = \frac{p-d}{p}$
- D $\eta = \frac{p+d}{p}$

Answer: C

Question 153

If the moment of inertia of a section about its axis is I and its effective sectional area is A, its radius of gyration r about the axis is

- A $r = \frac{I}{A}$
- B $r = \sqrt{\frac{I}{A}}$
- C $r = \sqrt{\frac{A}{I}}$
- D None of these

Answer: B

Question 154

Allowable working stress corresponding to the slenderness ratio of double angles placed back to back and connected to one side of a gusset plate is reduced to

- A 50%
- B 60%
- C 70%
- D 80%

Answer: D

Question 155

According to I.S. : 800 - 1871, lacing bars resist transverse shear equal to _____.

- A 1.0 % of the axial load
- B 2.0 % of the axial load
- C 2.5 % of the axial load
- D 3.0 % of the axial load

Answer: C

Question 156

Pick up the correct statement from the following

- A Loaded columns are supported on column bases
- B Column bases transmit the column load to the concrete foundation
- C Column load is spread over a large area on concrete
- D All option are correct

Answer: D

Question 157

In the composition of good bricks, the total content of silt and clay, by weight, should not be less than:-

- A 20%
- B 30%
- C 50%
- D 75%

Answer: C

Question 158

In factory buildings, the horizontal beams spanning between the wall columns supporting a wall covering are called

- A stringers
- B trimmers
- C girts

D lintels

Answer: C

Question 159

The average shear stress (in kg/cm^2) for rolled beam section, is

A 845

B 945

C 1025

D 1500

Answer: B

Question 160

Web crippling generally occurs at the point where

A bending moment is maximum

B shearing force is minimum

C concentrated loads act

D deflection is maximum

Answer: C

Question 161

The strength and quality of concrete, depends upon:

A grading of aggregates

B surface area of aggregates

C shape of aggregates

D All option are correct

Answer: D

Question 162

The process of adding water to lime to convert it into a hydrated lime is termed as:-

A watering

B baking

C hydration

D slaking

Answer: D

Question 163

If aggregates completely pass through a sieve of size 75 mm and are retained on a sieve of size 60 mm, the aggregates will be known as elongated aggregate if its length is not less than

- A 81.5 mm
- B 91.5 mm
- C 101.5 mm
- D 121.5 mm

Answer: D

Question 164

The calcination of pure lime result in:-

- A quick lime
- B hydraulic lime
- C hydrated lime
- D fat lime

Answer: A

Question 165

Pick up the correct statement from the following

- A An increase in water content must be accompanied by an increase in cement content
- B Angular and rough aggregates reduce the workability of the concrete
- C Large size aggregates increase the workability due to lesser surface area
- D All option are correct

Answer: D

Question 166

According to I.S. 456, the number of grades of standard concrete mixes are

- A 3
- B 5
- C 6
- D 7

Answer: D

Question 167

Curing a concrete for long period ensures better

- A volume stability

- B strength
- C water resistance
- D All option are correct

Answer: D

Question 168

The main object of compaction of concrete is

- A to eliminate air holes
- B to achieve maximum density
- C to provide intimate contact between the concrete and embedded materials
- D All option are correct

Answer: D

Question 169

Construction joints are provided

- A where B.M and S.F are small
- B where the member is supported by other member
- C at 18 m apart in huge structures
- D All option are correct

Answer: D

Question 170

Pick up the correct statement from the following

- A Construction joints are necessarily planned for their locations
- B Expansion joints are provided to accommodate thermal expansion
- C Construction joints are provided to control shrinkage cracks
- D All option are correct

Answer: D

Question 171

Grading of sand causes great variation in

- A workability of concrete
- B strength of concrete
- C durability of concrete
- D All option are correct

Answer: D

Question 172

The light weight aggregates are obtained from

- A sedimentary rocks
- B metamorphic rocks
- C igneous rocks
- D volcanic source

Answer: D

Question 173

The bulk density of aggregates depends upon its

- A shape
- B grading
- C compaction
- D All option are correct

Answer: D

Question 174

Batching error means inaccuracy in the quantity of

- A aggregates
- B cement
- C water
- D All option are correct

Answer: D

Question 175

The center needle of the attachment of the Vicat plunger projects the circular cutting edge by

- A 0.2 mm
- B 0.5 mm
- C 1 mm
- D 5 mm

Answer: B

Question 176

The flakiness index of aggregates is the percentage by weight of particles in it whose thickness is less than_____

- A $\frac{2}{5}$ of the mean length

- B $\frac{3}{5}$ of the mean length
- C $\frac{4}{5}$ of the mean length
- D None of these

Answer: B

Question 177

The field test for the quality of cement consists in putting a small quantity of cement in a bucket containing water. A good quality cement will:

- A immediately dissolve in the water
- B float on the water surface
- C sink to the bottom of the bucket
- D produce the steam

Answer: B

Question 178

For the repair of roads

- A low-heat cement is used
- B rapid-hardening cement is used
- C high-alumina cement is used
- D sulphate-resisting cement is used

Answer: B

Question 179

The advantage of reinforced concrete, is due to

- A monolithic character
- B fire-resisting and durability
- C economy because of less maintenance cost
- D All option are correct

Answer: D

Question 180

By over-reinforcing a beam, the moment of resistance can be increased not more than

- A 10%
- B 15%
- C 20%
- D 25%

Answer: D

Question 181

Spacing of stirrups in a rectangular beam, is

- A kept constant throughout the length
- B decreased towards the center of the beam
- C increased at the ends
- D increased at the center of the beam

Answer: D

Question 182

The radius of a bar bend to form a hook should not be less than

- A twice the diameter
- B thrice the diameter
- C four times the diameter
- D five times the diameter

Answer: A

Question 183

Steel bars are generally connected together to get greater length than the standard length by providing

- A straight bar splice
- B hooked splice
- C dowel splice
- D All option are correct

Answer: D

Question 184

The diameter of longitudinal bars of a column should never be less than

- A 6 mm
- B 8 mm
- C 10 mm
- D 12 mm

Answer: D

Question 185

The maximum ratio of span to depth of a slab simply supported and spanning in two directions is

- A 25
- B 30
- C 35
- D 40

Answer: C

Question 186

For a continuous slab supported at ends and carried over intermediate beams

- A Max. sagging B.M. for the end spans = $+\frac{wl^2}{10}$
- B Max. hogging B.M. over penultimate supports is equal to $-\frac{wl^2}{10}$
- C Max. sagging B.M. for the interior spans = $+\frac{wl^2}{12}$
- D All option are correct

Answer: D

Question 187

The advantage of a concrete pile over a timber pile is

- A no decay due to termites
- B no restriction on length
- C higher bearing capacity
- D All option are correct

Answer: D

Question 188

- A raft foundation is provided if its area exceeds the plan area of the building by

- A 10%
- B 20%
- C 30%
- D 50%

Answer: D

Question 189

The forces in the members of simple trusses may be analysed by

- A graphical method
- B method of joints
- C method of sections

D All option are correct

Answer: D

Question 190

A rolled steel joist is simply supported at its end and carries a uniformly distributed load which causes a maximum deflection of 10 mm and slope at the ends of 0.002 radian. The length of the joist will be

A 10 m

B 12 m

C 14 m

D 16 m

Answer: D

Question 191

A lift of weight W is lifted by a rope with an acceleration f . If the area of cross-section of the rope is A , the stress in the rope is

A $\frac{W(1+f)}{A}$

B $\frac{(1-f)}{A}$

C $\frac{W(2+f)}{A}$

D $\frac{W(2+g)}{A}$

Answer: A

Question 192

A material which obeys Hooke's law is subjected to direct stress σ_0 . At its elastic limit, which of the following statements is true?

A Strain is equal to $\frac{\sigma_0}{E}$

B Maximum shear stress = $\frac{\sigma_0}{2}$

C Strain energy = $\frac{(\sigma_0)^2}{2E} \times volume$

D All option are correct

Answer: D

Question 193

Keeping the depth d constant, the width of a cantilever of length l of uniform strength loaded with a uniformly distributed load w varies from zero at the free end and

A $\left(\frac{2w}{\sigma d^2}\right) * l^2$ at the fixed end

B $\left(\frac{3w}{\sigma d^2}\right) * l^2$ at the fixed end

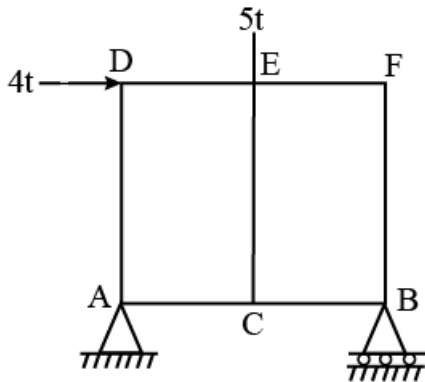
C $\left(\frac{3w}{\sigma d}\right) * l^2$ at the fixed end

D $\left(\frac{5w}{\sigma d}\right) * l^2$ at the fixed end

Answer: B

Question 194

The force of EC of the truss shown in the figure below is



A zero

B 5t tension

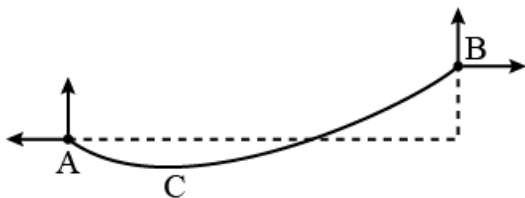
C 5t compression

D 4t tension

Answer: C

Question 195

In the cable shown in the figure below, the minimum tension occurs at



A A

B B

C C

D Between A and C

Answer: C

Question 196

A shaft is subjected to a bending moment M and a torque T simultaneously. The ratio of the maximum bending stress to maximum shear stress developed in the shaft is

A $\frac{M}{T}$

B $\frac{T}{M}$

C $\frac{2M}{T}$

D $\frac{2I}{M}$

Answer: C

Question 197

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

Answer: A

Question 198

In plastic analysis, the shape factor for a triangular section is

A 1.5

B 1.34

C 2.34

D 25

Answer: C

Question 199

Shear center of a half circular section of radius r and of constant thickness, lies at a distance of x from the center, where x is

A $\frac{r}{\pi}$

B $\frac{2r}{\pi}$

C $\frac{3r}{\pi}$

D $\frac{4r}{\pi}$

Answer: D

Question 200

A three-hinged arch is generally hinged at its supports and

A at one quarter span

B at the crown

C anywhere in the rib

D None of these

Answer: C

