



SSC JE Civil Engineering 25th May 2014 Shift-2

All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature without the permission of cracku.in, application for which shall be made to support@cracku.in

General Intelligence and Reasoning

Instructions

In the following questions, select the related word/letters/numbers from the given alternatives.

Question 1

Uttarakhand : Dehradun :: Mizoram : ?

- A Aizawl
- B Kohima
- C Shillong
- D Darjeeling

Answer: A

Explanation:

Dehradun is the capital of the Uttarakhand similarly Aizawl is the capital of the Mizoram.

∴ Option A is the correct answer.

Question 2

Crime : Court :: Disease : ?

- A Doctor
- B Medicine
- C Hospital
- D Treatment

Answer: C

Explanation:

As crime is related to court similarly, disease is related to hospital.

∴ The correct answer is option C.

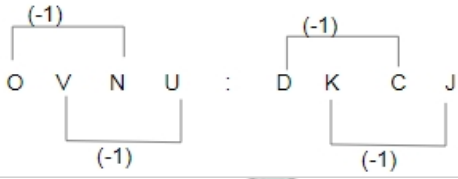
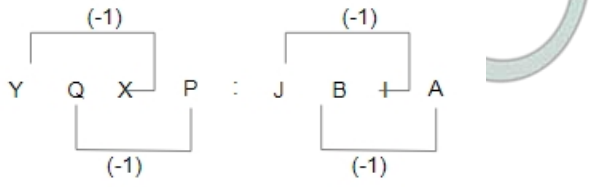
Question 3

YQXP : JBIA :: OVNU : ?

- A FAGZ
- B HRIS
- C DKCJ
- D DNEO

Answer: C

Explanation:



∴ Option C is the correct answer.

Question 4

ADGJ : BEHK :: DGJM : ?

- A KPUB
- B EHKN
- C KNQT
- D PSVY

Answer: B

Explanation:

In ADGJ : BEHK

- A (+1) → B
- D (+1) → E
- G (+1) → H
- J (+1) → K

Similarly,

In DGJM : ?

- D (+1) → E
- G (+1) → H
- J (+1) → K
- M (+1) → N

? = EHKN

∴ Option B is the correct answer.

Question 5

ACE : BDF :: GIK : ?

- A HJL
- B AXP
- C CFG
- D GFC

Answer: A

Explanation:

In ACE : BDF

A (+1) → B

C (+1) → D

E (+1) → F

Similarly,

In GIK : ?,

G (+1) → H

I (+1) → J

K (+1) → L

∴ Option A is the correct answer.

Question 6

CAT : BIG :: DDY : ?

A CLL

B CLM

C CML

D CEP

Answer: A

Explanation:

For CAT : BIG,

C (-1) → B

A (+8) → I

T (+13) → G

Similarly,

For DDY : ?,

D (-1) → C

D (+8) → L

Y (+13) → L

∴ Option CLL is the correct answer.

Question 7

1 : 1 :: 10 : ?

A 12

B 110

C 210

D 1000

Answer: D

Explanation:

1 : ($1^3 = 1$)

10 : ($10^3 = 1000$)

Question 8

7 : 56 :: 5 : ?

- A 25
- B 26
- C 30
- D 35

Answer: C

Explanation:

$$7 \times (7 + 1) = 56$$

$$5 \times (5 + 1) = 30$$

Instructions

For the following questions answer them individually

Question 9

The following numbers fall in a group. Which one does not belong to the group ?

53, 63, 83, 73

- A 53
- B 63
- C 83
- D 73

Answer: B

Explanation:

Only 63 is divisible by 3 so 63 not belong to this group.

∴ Option B is correct answer.

Question 10

Which one is the same as Mumbai, Kolkata and Cochin

- A Delhi
- B Kanpur
- C Chennai
- D Sholapur

Answer: C

Explanation:

Mumbai, Kolkata and Cochin are the capitals of states similarly Chennai is capital of Tamilnadu.

Instructions

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

Question 11

- A Kolkata

- B Vishakhapatnam
- C Bengaluru
- D Haldia

Answer: C

Explanation:

Except Bengaluru remaining all are ports.

Question 12

- A Cabbage
- B Carrot
- C Potato
- D Beetroot

Answer: A

Explanation:

Carrot, Potato and Beetroot are the root so Cabbage is odd.

Question 13

- A HGFE
- B PONM
- C DCBA
- D MSTU

Answer: D

Explanation:

In HGFE,

$H - 1 \rightarrow G - 1 \rightarrow F - 1 \rightarrow E$

In PONM,

$P - 1 \rightarrow O - 1 \rightarrow N - 1 \rightarrow M$

In DCBA,

$D - 1 \rightarrow C - 1 \rightarrow B - 1 \rightarrow A$

In MSTU,

$M + 6 \rightarrow S + 1 \rightarrow T + 1 \rightarrow U$

\therefore Option D is different.

Question 14

- A GFI
- B VUX
- C POR
- D LKM

Answer: D

Explanation:

In GFI,

$$G - 1 \rightarrow F + 3 \rightarrow I$$

In VUX,

$$V - 1 \rightarrow U + 3 \rightarrow X$$

In POR,

$$P - 1 \rightarrow O + 3 \rightarrow R$$

In LKM,

$$L - 1 \rightarrow K + 2 \rightarrow M$$

∴ Option D is the correct answer.

Question 15

A vwqp

B yxmn

C gfkI

D cbrs

Answer: A

Explanation:

In the vwqp,

$$v + 1 = w - 6 = q + 1 = p$$

In the yxmn,

$$y - 1 = x - 11 = m + 1 = n$$

In the gfkI,

$$g - 1 = f + 5 = k + 1 = I$$

In the cbrs,

$$c - 1 = b + 16 = r + 1 = s$$

∴ vwqp is odd.

Question 16

A (324, 18)

B (441, 72)

C (117, 81)

D (186, 14)

Answer: D

Explanation:

$$(324, 18) \rightarrow 3 + 2 + 4 = 9 \text{ and } 1 + 8 = 9$$

$$(441, 72) \rightarrow 4 + 4 + 1 = 9 \text{ and } 7 + 2 = 9$$

$$(117, 81) \rightarrow 1 + 1 + 7 = 9 \text{ and } 8 + 1 = 9$$

$$(186, 14) \rightarrow 1 + 8 + 6 = 15 \text{ and } 1 + 4 = 5$$

(186, 14) is odd.

Question 17

- A (11, 121)
- B (25, 625)
- C (12, 141)
- D (15, 225)

Answer: C

Explanation:

In (11, 121),

$$(11)^2 = 121$$

In (25, 625),

$$(25)^2 = 625$$

In (12, 141),

$$(12)^2 = 144$$

In (15, 225),

$$(15)^2 = 225$$

therefore (12, 141) is odd.

Instructions

For the following questions answer them individually

Question 18

Find the smallest number which when divided by 25, 40, or 56 has in each case 13 as remainder.

- A 1413
- B 1400
- C 1439
- D 1426

Answer: A

Explanation:

Smallest number = (LCM of 25, 40 and 56) + remainder

$$\text{Factor of 25} = 5^2$$

$$\text{Factor of 40} = 2^3 \cdot 5$$

$$\text{Factor of 56} = 2^3 \cdot 7$$

$$\text{LCM of 25, 40 and 56} = 2^3 \cdot 5^2 \cdot 7 = 1400$$

$$\text{Smallest number} = 1400 + 13 = 1413$$

Question 19

Arrange the following words as per order in the dictionary:

1. Emplane
2. Empower
3. Embrace
4. Elocution
5. Equable

- A 5, 1, 3, 2, 4
- B 4, 2, 1, 3, 5
- C 4, 3, 1, 2, 5
- D 4, 5, 2, 3, 1

Answer: C

Explanation:

Order as per dictionary,

Elocution → Embrace → Emplane → Empower → Equable

Question 20

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

- 1. Sowing
- 2. Tilling
- 3. Reaping
- 4. Weeding

- A 3, 1, 2, 4
- B 2, 1, 4, 3
- C 1, 2, 4, 3
- D 1, 3, 2, 4

Answer: B

Explanation:

Order of meaningful word,

Tilling → Sowing → Weeding → Reaping

Question 21

Arrange the colours of the rainbow (in the reverse order)(from the top edge):

Red, Orange,

- 1. Blue
- 2. Indigo
- 3. Yellow
- 4. Green
- 5. Violet

- A 3, 4, 1, 2, 5
- B 4, 3, 2, 5, 1
- C 5, 3, 4, 2, 1
- D 2, 4, 3, 1, 5

Answer: A

Explanation:

Colors of the rainbow (in the reverse order) = Red, Orange, Yellow, Green, Blue, Indigo, Violet

Instructions

In the following questions, a series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

Question 22

CEG, JLN, QSU,

A QQS

B TVX

C HJL

D UVW

Answer: C

Explanation:

In CEG,

$$C + 2 \rightarrow E + 2 \rightarrow G$$

In JLN,

$$J + 2 \rightarrow L + 2 \rightarrow N$$

In QSU,

$$Q + 2 \rightarrow S + 2 \rightarrow U$$

Similarly,

In HJL,

$$H + 2 \rightarrow J + 2 \rightarrow L$$

∴ The correct option is HJL.

Question 23

B-1, D-2, F-4, H-8, J-16,

A K-64

B L-32

C M-32

D L-64

Answer: B

Explanation:

Order of letters,

$$B + 2 = D + 2 = F + 2 = H + 2 = J + 2 = L$$

Order of numbers,

$$1 \times 2 = 2$$

$$2 \times 2 = 4$$

$$4 \times 2 = 8$$

$$8 \times 2 = 16$$

$$16 \times 2 = 32$$

So, next term = L-32

Question 24

CGJ, KOR, TXA,

- A ACE
- B JDP
- C FJM
- D UWY

Answer: C

Explanation:

For CGJ,

$$C + 4 = G$$

$$G + 3 = J$$

For KOR,

$$K + 4 = O$$

$$O + 3 = R$$

Similarly,

For FJM,

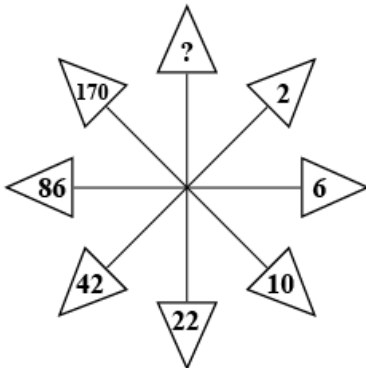
$$F + 4 = J$$

$$J + 3 = M$$

Instructions

In the following questions find the missing number from the given responses.

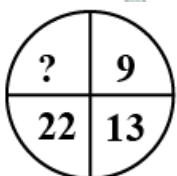
Question 25



- A 422
- B 374
- C 256
- D 342

Answer: D

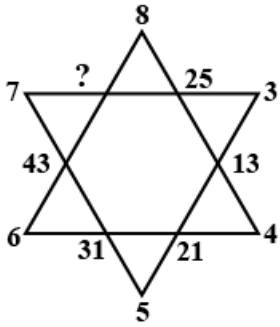
Question 26



- A 40
- B 38
- C 39
- D 44

Answer: B

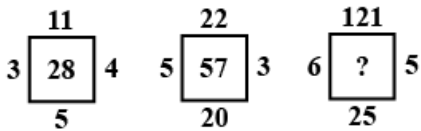
Question 27



- A 56
- B 57
- C 58
- D 59

Answer: B

Question 28



- A 176
- B 115
- C 157
- D 131

Answer: A

Explanation:

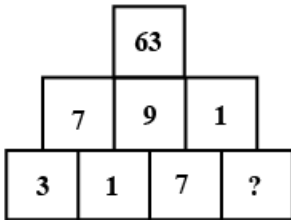
$$(11 + 5) + 3 \times 4 = 16 + 12 = 28$$

$$(22 + 20) + 5 \times 3 = 42 + 15 = 57$$

$$(121 + 25) + 6 \times 5 = 146 + 30 = 176$$

∴ The correct answer is option A.

Question 29



- A 3
- B 9
- C 5
- D 2

Answer: A

Instructions

For the following questions answer them individually

Question 30

Arrange the letters to form a word and suggest what is it.

NGDEALN

- A State
- B Country
- C River
- D Ocean

Answer: B

Explanation:

Number of the letter in NGDEALN = 7

So, possible word = Country

(∵ Number of the letter in Country = 7)

Question 31

If A = 1, B = 2 and N = 14, then BEADING = ?

- A 2154(14)97
- B 2514(14)79
- C 25149(14)7
- D 2154(14)79

Answer: C

Explanation:

A = 1,

B = 2

N = 14,

BEADING = 25149(14)7

Question 32

If $A = 1$, $AGE = 13$, then $CAR = ?$

- A 19
- B 20
- C 21
- D 22

Answer: D

Explanation:

$A = 1$,
 $AGE = 1 + 7 + 5 = 13$
 $CAR = 3 + 1 + 18 = 22$

Question 33

If an electric train runs in the direction from North to South with a speed of 150 km/hr covering 2000 km, then in which direction will the smoke of its engine go ?

- A $N \rightarrow S$
- B $S \rightarrow N$
- C $E \rightarrow W$
- D No direction

Answer: D

Explanation:

An electric train does not emit smoke. Therefore, no smoke will be going in any of the direction.

Question 34

If $1 = 1$, $2 = 3$, $3 = 5$, and $4 = 7$, then $5 = ?$

- A 9
- B 7
- C 5
- D 8

Answer: A

Explanation:

The logic is,

$1 = 1 \times 2 - 1 = 1$,
 $2 = 2 \times 2 - 1 = 3$,
 $3 = 3 \times 2 - 1 = 5$,
 $4 = 4 \times 2 - 1 = 7$,
 $5 = 5 \times 2 - 1 = 9$

Question 35

Find the answer of the following:

$$7 + 3 = 421$$

$$11 + 7 = 477$$

$$9 + 5 = 445$$

$$6 + 2 = ?$$

A 444

B 412

C 475

D 487

Answer: B

Explanation:

$$7 + 3 = (7 - 3)(7 \times 3) = 421$$

$$11 + 7 = (11 - 7)(11 \times 7) = 477$$

$$9 + 5 = (9 - 5)(9 \times 5) = 445$$

$$6 + 2 = (6 - 2)(6 \times 2) = 412$$

Question 36

Find the odd number out:

18, 34, 36, 54

A 34

B 54

C 18

D 36

Answer: A

Explanation:

$$18 = 1 + 8 = 9$$

$$34 = 3 + 4 = 7$$

$$36 = 3 + 6 = 9$$

$$54 = 5 + 4 = 9$$

∴ 34 is odd.

Question 37

Introducing a girl, Ram said to his son-in-law, "Her brother is the only son of my brother-in-law." Who is the girl of Ram ?

A Sister-in-law

B Niece

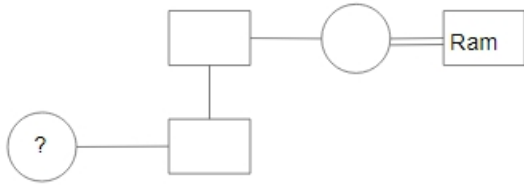
C Daughter

D Sister

Answer: B

Explanation:

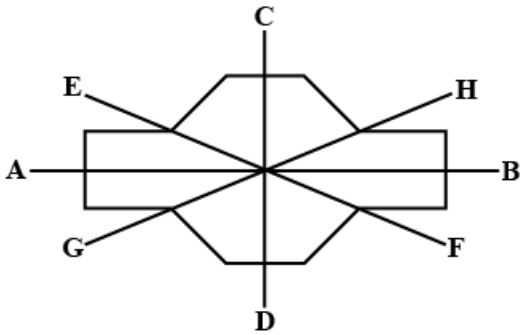
In the following diagram,
 Circle represents female
 Square represents male
 Single horizontal line represents sibling
 Double horizontal line represents couple
 Single vertical line represents Mother/Father/Son/Daughter



∴ The girl is niece.

Question 38

Which of the following are the lines of symmetry ?



- A AB and CD
- B EF and GH
- C All of the above
- D None of the above

Answer: C

Question 39

Murthy drove from town A to town B. In the first hour, he travelled $\frac{1}{4}$ of the journey. In the next one hour, he travelled $\frac{1}{2}$ of the journey. In the last 30 minutes, he travelled 80 km. Find the distance of the whole journey.

- A 240 km
- B 300 km
- C 320 km
- D 360 km

Answer: C

Explanation:

Let the total journey be x km.

Remaining distance of the journey = 80 km

$$x - \frac{x}{4} - \frac{x}{2} = 80 \text{ km}$$

$$\frac{x}{4} = 80$$

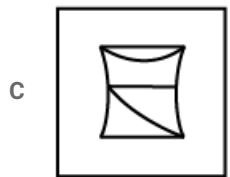
$x = 320$ km

∴ Total distance is 320 km of whole journey.

Question 40

Identify the answer figure from which the pieces given in question figure have been cut.

Question figure:

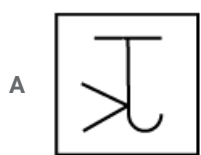


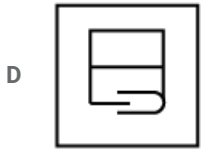
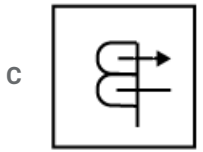
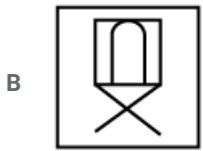
Answer: C

Question 41

Which of the answer figures is not made up only by the components of the question figure?

Question figure:

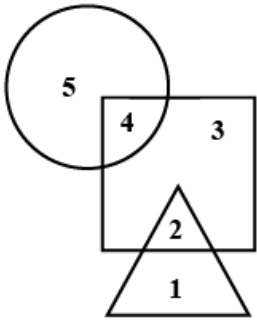




Answer: C

Question 42

Which of the following numbers is present only in the square and the circle?



A 5

B 4

C 3

D 2

Answer: B

Question 43

Which figure represents the relation among Computer, Internet and Information-Communication Technology?



Answer: B

Instructions

In the following questions, one or two statements are given, followed by three/four Conclusions/Arguments, I, II, III and IV. You have to consider the statements to be true, even if they seem to be at variance from commonly known facts. You are to decide which of the given Conclusions/Arguments can definitely be drawn from the given statement(s). Indicate your answer.

Question 44

Statements :

1. SAGE is a reputed publisher of both journals and books.
2. All publishing of SAGE is highly qualitative.

Conclusions :

- I. SAGE publishes qualitative articles.
- II. SAGE did not publish lowest quality articles.
- III. SAGE enriches its publications by high scrutinization.

- A Only conclusion III
- B All conclusions
- C Only conclusion I and II
- D Only conclusion II and III

Answer: B

Explanation:

All conclusion are strong.

Question 45

Statements:

Should little children be loaded with such heavy school bags ?

Arguments :

- I. Yes, a heavy bag means more knowledge.
- II. No, heavy school bags spoil the posture of the children.
- III. Yes, children need to be adapted for earning knowledge.
- IV. No, a heavy bag never ensures knowledge gathering.

- A I and III appear to be strong arguments
- B I and III are poor arguments
- C II and IV are strong arguments
- D I and IV are strong arguments

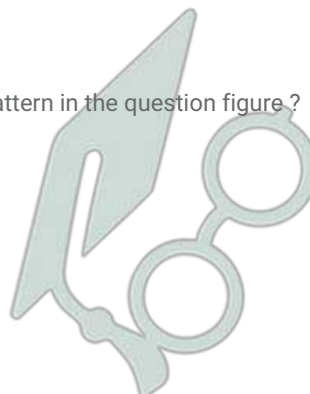
Answer: C

Explanation:

II and IV are strong arguments.

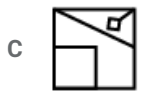
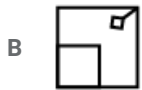
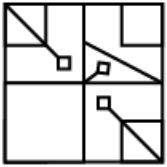
Instructions

In the following questions, which answer figure will complete the pattern in the question figure ?



Question 46

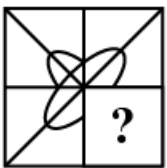
Question figure:



Answer: C

Question 47

Question figure:



Answer: D

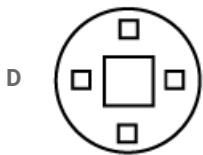
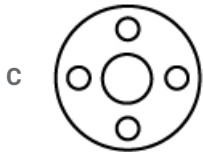
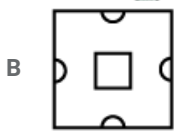
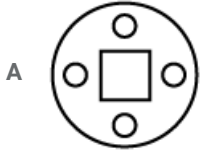
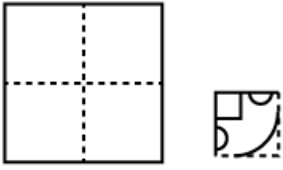
Instructions

For the following questions answer them individually

Question 48

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 figure:

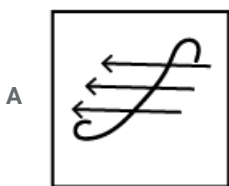
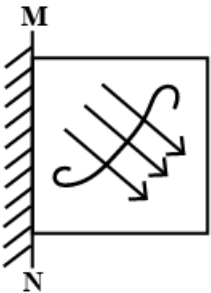


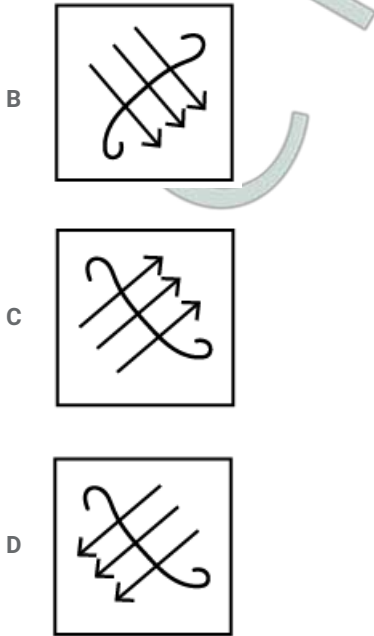
Answer: A

Question 49

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

Question figure:





Answer: D

Question 50

In the following question, a matrix of certain characters is given. These characters follow a certain trend, row-wise or column-wise. Find out this trend and choose the missing characters accordingly.

9	10	5
5	6	4
4	6	4
536	660	?

- A 450
- B 550
- C 320
- D 420

Answer: D

General Awareness

Instructions

For the following questions answer them individually

Question 51

Classification of Economics into two branches (Macro Economics and Micro Economics) was done by

- A J.M. Keynes
- B Milton Friedman
- C Ragnar Frisch
- D Adam Smith

Answer: C

Question 52

'Capital Goods' refers to goods which

- A Serve as a source of raising further capital
- B Help in the further production of goods
- C Directly go into the satisfaction of human wants
- D Find multiple uses

Answer: B

Question 53

NNP is equal to

- A GNP + Depreciation
- B GNP - Depreciation
- C GNP + Exports
- D GNP - Exports

Answer: B

Question 54

Rate of growth of an economy is measured in terms of

- A Per capita income
- B Industrial development
- C Number of people who have been lifted above the poverty line.
- D National income

Answer: D

Question 55

The basic characteristic of oligopoly is

- A A few sellers, a few buyers
- B A few sellers, many buyers
- C A few sellers, one buyer
- D Many sellers, a few buyers

Answer: B

Question 56

Governor will act on the advice of Council of Ministers while

- A Dissolving the Legislative Assembly

- B Appointing the chairman of the State Public Service Commission
- C Recommending for President's Rule in the State
- D Returning a bill for reconsideration

Answer: A

Question 57

The Supreme Court of India was set up by the

- A Regulation Act, 1773
- B Pitts India Act, 1784
- C Charter Act, 1813
- D Charter Act, 1833

Answer: A

Question 58

Which Constitutional Amendment provided Constitutional status to Panchayat Raj Institutions ?

- A 93rd Amendment
- B 44th Amendment
- C 42nd Amendment
- D 73rd Amendment

Answer: D

Question 59

Who has the power to pardon in case of capital punishment ?

- A Prime Minister
- B President
- C Chief Justice
- D Attorney General of India

Answer: B

Question 60

The Union Public Service Commission of India has been established under

- A Article 315
- B Article 320
- C Article 325
- D Article 335

Answer: A

Question 61

The Harappans worshipped

- A Shiva, Parvathi and Vishnu
- B Mother Goddess and Prashupathi
- C Vishnu and Mother Goddess
- D Pashupathi and Vishnu

Answer: B

Question 62

Gandhiji started the Dandi March for

- A Poorna Swaraj
- B Home-rule
- C Protest against the imposition of Salt Tax
- D Responsible Government

Answer: C

Question 63

The famous court poet of Akbar was

- A Birbal
- B Tulsidas
- C Rahim Khan
- D Bairam Khan

Answer: B

Question 64

Who established four great Mathas at the four corners of India - Sringeri, Puri, Dwaraka and Badrinath ?

- A Shankara
- B Ramanuja
- C Madhva
- D Ramananda

Answer: A

Question 65

The local name of Mohenjodaro is

- A Mound of the living

- B Mound of the great
- C Mound of the dead
- D Mound of bones

Answer: C

Question 66

Which is the longest dam in India ?

- A Bhakra-Nangal
- B Rihand
- C Hirakud
- D Nagarjuna Sagar

Answer: C

Question 67

The Thermal Power Plant in Tamil Nadu is

- A Kundah
- B Ramagundam
- C Pykara
- D Neyveli

Answer: D

Question 68

Which of the following regions does not come under the Mediterranean type of climate ?

- A Iberian Peninsula
- B California coast
- C Chilean coast
- D Eastern coast of South Africa

Answer: D

Question 69

The main cause of faulting is

- A Tension
- B Wind
- C Tidal activity
- D Gravitational force

Answer: A

Question 70

'Pan America' refers to

- A North America
- B South America
- C Central America
- D All the above

Answer: D

Question 71

Most primitive living vascular plants are

- A Brownalgae
- B Cycas
- C Ferns
- D Sphagnum

Answer: C

Question 72

Temporary wilting occurs in plants due to

- A Respiration
- B Transpiration
- C Photosynthesis
- D Absorption of water

Answer: B

Question 73

Lichens are a symbiotic association of

- A Algae and Fungi
- B Bacteria and Fungi
- C Bacteria and Algae
- D Fungi and Higher plants

Answer: A

Question 74

Photophobia is caused by the deficiency of

- A Vitamin B1
- B Vitamin B2

C Vitamin B4

D Vitamin B6

Answer: B

Question 75

Which of the following is present only in plant cell ?

A Cell membrane

B Mitochondria

C Cell wall

D Endoplasmic reticulum

Answer: C

Question 76

The yellow colour of mangoes is due to the presence of

A Chlorophyll

B Anthocyanin

C Anthoxanthin

D Carotene

Answer: D

Question 77

Lunar eclipse is caused by shadow of the

A Earth on the Moon

B Moon on the Sun

C Earth on the Sun

D Earth and the Moon on other stars

Answer: A

Question 78

The largest planet in the solar system is

A Venus

B Mars

C Jupiter

D Earth

Answer: C

Question 79

Asteroid belt is a region in the solar system that exists between the orbits of

- A Venus and Mars
- B Mars and Jupiter
- C Mercury and Earth
- D Jupiter and Uranus

Answer: B

Question 80

Electrocardiograph (ECG) is used to measure

- A Blood Count
- B Heart Beat
- C Temperature
- D Electricity

Answer: B

Question 81

USB stands for

- A Unique Serial Bus
- B Universal Serial Bus
- C Unary Serial Bus
- D Universal Secondary Bus

Answer: B

Question 82

In computer network terminology, WAN stands for

- A World area network
- B Wide area network
- C Wide array net
- D Wireless area network

Answer: B

Question 83

Which element produces hydrogen on reaction with strong alkali ?

- A Si
- B C

C P

D S

Answer: D

Question 84

Which metal does not react with dilute H_2SO_4 ?

A Pb

B Fe

C Zn

D Mg

Answer: A

Question 85

The unit of rate of reaction is

A Mol lit⁻¹ sec⁻¹

B Sec mol⁻¹

C Moles sec⁻¹

D Joules sec⁻¹

Answer: A

Question 86

Salt that dissolves in aqueous ammonia solution is

A $HgCl_2$

B $PbCl_2$

C $Cu(OH)_2$

D $Al(OH)_3$

Answer: C

Question 87

Residence time of water molecule in the ocean is

A 3.5 years

B 3.5 million years

C 35 years

D 35000 years

Answer: C

Question 88

Biotic environment includes

- A Producers
- B Consumers
- C Decomposers
- D All the above

Answer: D

Question 89

A natural phenomenon that becomes harmful due to pollution is

- A Global warming
- B Ecological balance
- C Greenhouse effect
- D Desertification

Answer: C

Question 90

Decomposers include

- A Bacteria
- B Fungi
- C Both Bacteria and Fungi
- D Animals

Answer: C

Question 91

Who said about religion that "it is the opium of the masses"?

- A Hitler
- B Stalin
- C Lenin
- D Marx

Answer: D

Question 92

The first woman in the world to have climbed Mt. Everest twice is

- A Bachendri Pal
- B Molly Chacko

C Santosh Yadav

D Theresia Kiesel

Answer: C

Question 93

What is the basic foundation of

A Political campaigns

B Social movements

C Religion and morality

D Freedom of the individual

Answer: D

Question 94

Amir Khusran was a famous poet in the court of

A Akbar

B Shahjahan

C Ibrahim Lodhi

D Alauddin Khilji

Answer: D

Question 95

In the year 1905, Gopal Krishna Gokhale founded the

A Servants of India Society

B Asiatic Society

C Brahmo Samaj

D Bharat Sewak Samaj

Answer: A

Question 96

Gandhiji believed that Satyagraha is a weapon of

A the poor

B the weak

C the untouchables

D the brave

Answer: D

Question 97

Pt. Shiv Kumar Sharma is an exponent of

- A Mandolin
- B Santoor
- C Sitar
- D Veena

Answer: B

Question 98

Patanjali is well-known for the compilation of

- A Yogasutra
- B Panchatantra
- C Brahmasutra
- D Ayurveda

Answer: A

Question 99

Which of the following Presidents of America abolished Slavery ?

- A Abraham Lincoln
- B Thomas Jefferson
- C Geoge Washington
- D Stanley Jackson

Answer: A

Question 100

Who is the first woman cosmonaut of the world

- A Valentina Tereshkova
- B Maria Estela Peron
- C Svetlana Savitskaya
- D Kay Cotte

Answer: A

General Engineering (Civil & Structural)

Instructions

For the following questions answer them individually

Question 101

Mild steel used in RCC structures conforms to

- A IS : 432
- B IS : 1566
- C IS : 1786
- D IS : 2062

Answer: A

Question 102

Which of the following types of lime is used for plastering and white washing?

- A Quick lime
- B Slaked lime
- C Hydraulic lime
- D Fat lime

Answer: D

Question 103

Which of the following acts as retarder for the concrete?

- A Calcium chloride
- B Calcium lignosulphonate
- C Calcium stearate
- D Aluminium powder

Answer: B

Question 104

Identify the wrong statement

- A Bulking of sand can go up to 40%
- B Bulking of sand is maximum at 4.6% moisture content.
- C Bulking of sand is considered in weight batching of concrete mix.
- D Bulking of sand occurs due to free moisture film formation over sand grain

Answer: C

Question 105

Strength based classification of bricks made on the basis of

- A IS : 3101
- B IS : 3102

C IS : 3495

D IS : 3496

Answer: B

Question 106

In paints, methylated spirit, naphtha and turpentine are used as

A Base

B Binder

C Solvent

D Extender

Answer: C

Question 107

Coarse sand has a fineness modulus the range of

A 2.2 - 2.4

B 2.4 - 2.6

C 2.6 - 2.9

D 2.9 - 3.2

Answer: D

Question 108

Under heat and pressure, granite can transform into

A quartzite marble

B marble

C slate

D gneiss

Answer: D

Question 109

Aluminium is anodized to protect it from weathering effect by forming surface coat of

A Aluminium carbide

B Aluminium barate

C Aluminium oxide

D Red lead

Answer: C

Question 110

Quartzite and marble are by nature

- A volcanic
- B plutonic
- C sedimentary
- D metamorphic

Answer: D

Question 111

Most accurate method of estimation is based on

- A Building cost index estimate
- B Plinth area estimate
- C Detailed estimate
- D Cube rate estimate

Answer: C

Question 112

The annual instalment (I) of the sinking funds (S) over n years, at i rate of interest may be calculated from the formula

- A $I = \frac{Si}{(1+i)^{n-1}}$
- B $I = Si/(1+i)^{n-1}/i$
- C $I = Si/(1+i)^{n+1}/(1+i)$
- D $I = Si/(1+i)$

Answer: A

Question 113

The plan of a building is in the form of a rectangle with centre line dimensions of the outer walls as $10.3m \times 15.3m$. The thickness of the walls is superstructure is 0.3 m. Then its carpet area is

- A $150m^3$
- B $157.59m^3$
- C $165.36m^3$
- D $170m^3$

Answer: A

Question 114

Pick up the item of work not included in the plinth area estimate

- A Wall thickness

- B Room area
- C Verandah area
- D Courtyard area

Answer: D

Question 115

One brick thickness of wall is roughly equal to

- A 10 cm
- B 15 cm
- C 20 cm
- D 30 cm

Answer: C

Question 116

A work costing Rs. 20,000 is termed as

- A Petty work
- B Minor work
- C Major work
- D Minor project

Answer: A

Question 117

The density of cement is taken to be

- A $1000\text{kg}/\text{m}^3$
- B $1250\text{kg}/\text{m}^3$
- C $1440\text{kg}/\text{m}^3$
- D $1800\text{kg}/\text{m}^3$

Answer: C

Question 118

The damp proof course (D.P.C) of uniform thickness in a building having walls of different widths is measured in

- A m^4
- B m^3
- C m^2
- D m

Answer: C

Question 119

Volume by Trapezoidal Formula Method determined by the formula

- A $D \left\{ \frac{A_0 + A_n}{2} + A_2 + A_4 + A_6 + \dots A_{n-1} \right\}$
- B $D \left\{ \frac{A_1 + A_n}{2} + A_0 + A_1 + A_3 + \dots A_{n-1} \right\}$
- C $D \left\{ \frac{A_0 + A_1}{2} + A_1 + A_3 + A_5 + \dots A_{n-1} \right\}$
- D $D \left\{ \frac{A_0 + A_n}{2} + A_1 + A_2 + A_3 + A_4 + \dots A_{n-1} \right\}$

Answer: D

Question 120

The value of the property at the end of its useful life (without being dismantled) is known as

- A Salvage value
- B Scrap value
- C Book value
- D Junk value

Answer: A

Question 121

The multiplying constant for the tachometer is, generally, kept as

- A 100
- B 20
- C 40
- D 60

Answer: A

Question 122

The fundamental principle of surveying is to work from the

- A Whole to part
- B part to whole
- C lower level to higher level
- D higher level to lower level

Answer: A

Question 123

Radiation, Intersection and Resection are

- A Compass Surveying Techniques
- B Chain Surveying Techniques
- C Levelling Techniques
- D Plane Table Surveying Techniques

Answer: D

Question 124

Which of the following statements in respect of a map A having scale 1 : 1000 and another map B having scale 1 : 5000 is true?

- A Map A is a large scale map compared to map B
- B Map A is a large scale map compared to map A
- C Map B is a more detailed map compared to map A
- D None of the above

Answer: A

Question 125

The correction to be applied to each 30 m chain for a line measurement along a slope of θ is

- A $30(1 - \cos \theta)$
- B $30(1 - \sin \theta)$
- C $30(1 - \tan \theta)$
- D $30(1 - \cot \theta)$

Answer: A

Question 126

Narrowly spaced contour lines on a map shows that the area is

- A Flat
- B Steeply sloped
- C Vertical cliff
- D Overhand cliff

Answer: B

Question 127

The length of the tangent of a curve whose radius is T and angle of deflection Δ is

- A $R \tan \frac{\Delta}{2}$
- B $2R \sin \frac{\Delta}{2}$

C $2R \tan \frac{\Delta}{2}$

D $R \sin \frac{\Delta}{2}$

Answer: A

Question 128

If whole circle bearing of a line is $210^{\circ}0'0''$, its value in quadrantal bearing system is

A $S30^{\circ}0'0''W$

B $N30^{\circ}0'0''E$

C $S30^{\circ}0'0''E$

D $N30^{\circ}0'0''W$

Answer: A

Question 129

The magnetic declination is the difference between

A True Meridian and False Meridian

B False Meridian and True Meridian

C True Meridian and Magnetic Meridian

D Magnetic Meridian and False Meridian

Answer: C

Question 130

A staff reading taken on a point whose elevation is to be determined as a change point is called

A foresight reading

B backsight reading

C intermediate sight

D long sight

Answer: A

Question 131

Clay is generally

A cohesive

B permeable

C having large particle size

D None of the above

Answer: A

Question 132

The ratio $\frac{\text{Liquid limit} - \text{Water content}}{\text{Plasticity index}}$ for a soil mass is called

- A Liquidity index
- B Shrinkage ratio
- C Consistency index
- D Toughness index

Answer: C

Question 133

The volume of voids to the total volume of soil is known as

- A porosity
- B void ratio
- C air ratio
- D air content

Answer: A

Question 134

A fundamental equation of void ratio (e), specific gravity (G), water content (W) and the degree of saturation (S_p) is

A $e = \frac{WG}{S_p}$

B $W = \frac{eG}{S_p}$

C $G = \frac{eW}{S_p}$

D $S_p = \frac{eW}{G}$

Answer: A

Question 135

Manometer is a device used for measuring

- A Velocity
- B Pressure
- C Density
- D Discharge

Answer: B

Question 136

Capillarity is due to

- I. surface tension
- II. cohesion
- III. viscosity
- IV. vapour pressure
- V. weight density of liquid

- A II, III
- B III
- C I
- D II, III, V

Answer: C

Question 137

Flow of water through a passage under atmospheric pressure is called

- A Pipe flow
- B Uniform flow
- C Open channel flow
- D Non-uniform flow

Answer: C

Question 138

The discharge through a V-notch varies

- A proportional to head (H)
- B inversely proportional to angle θ
- C proportional to $H^{5/2}$
- D inversely proportional to $\tan \frac{\theta}{2}$

Answer: C

Question 139

The dimension for angular velocity is

- A T^2
- B T^{-1}
- C T^1
- D T^{-2}

Answer: B

Question 140

Which of the following flow constants does not have any unit?

- A Chezy's C
- B Manning's N
- C Both Chezy's C and Manning's N
- D None of the above

Answer: B

Question 141

Each term of the Bernoulli equation represents

- A energy per unit weight
- B energy per unit mass
- C energy per unit volume
- D specific energy

Answer: A

Question 142

Pressure in terms of metres of oil (specific gravity = 0.9) equivalent to 4.5 m of water of

- A 4.05
- B 5.0
- C 3.6
- D 0.298

Answer: B

Question 143

Typically, a hydroelectric plant will have following hydraulic machine:

- A Hydraulic Turbine
- B Hydraulic Pump
- C Electric Motor
- D None of the above

Answer: A

Question 144

Darcy - Weisbach equation to calculate the head loss due to friction for flow through pipes is applicable when the flow through the pipes can be

- A laminar flow

- B turbulent only
- C both laminar and turbulent
- D subcritical flow

Answer: C

Question 145

The ratio of the quantity of water stored in the root zone of the crops to the quantity of water actually delivered in the field is known as

- A water use efficiency
- B water conveyance efficiency
- C water application efficiency
- D water storage efficiency

Answer: C

Question 146

For unlined canals, the freeboard is measured from the

- A full supply level to top of the bank
- B top of the bank to bed of the canal
- C full supply level to top of the dowel
- D None of the above

Answer: A

Question 147

The ruling minimum radius of the curve for ruling design speed V m/sec, coefficient of friction f , acceleration due to gravity g m/sec^2 and superelevation e is given by

- A $\frac{V^2}{(e-f)g}$
- B $\frac{V^2}{(f-e)g}$
- C $\frac{V^2}{(e+f)g}$
- D $\frac{V^2}{(e+f)2g}$

Answer: C

Question 148

Camber in the road is provided for

- A countering the centrifugal force
- B effective drainage

C having proper sight distance

D avoiding overturning

Answer: B

Question 149

The standard 5-day BOD at 20°C , when compared to ultimate BOD is about

A 60%

B 68%

C 80%

D 90%

Answer: B

Question 150

The global warming is caused mainly by

A NO_x

B SO_x

C CO_2

D O_2

Answer: C

Question 151

The maximum shear force in a simply supported beam of span L, subjected to a central point load, W is given by the following equation :

A $\frac{W}{2}$

B WL

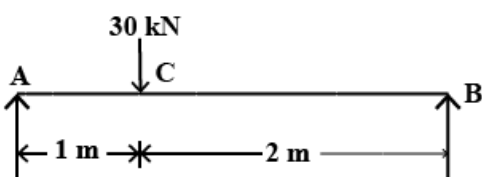
C $\frac{WL^2}{2}$

D $\frac{WL^2}{4}$

Answer: A

Question 152

For simply supported beam is shown in Fig., the magnitude of vertical reaction at 'B' is



A 20 kN

- B 18 kN
- C 15 kN
- D 10 kN

Answer: D

Question 153

"Poisson's ratio" is defined as the ratio of

- A lateral strain to linear strain
- B linear strain to lateral strain
- C lateral stress to linear stress
- D linear stress to lateral stress

Answer: A

Question 154

If 'A' is the area of cross-section and 'I' is the moment of inertia of a given plane section, then radius of gyration (r) is given by the formula

- A $r = \frac{I}{A}$
- B $r = \sqrt{\frac{I}{A}}$
- C $r = \frac{A}{I}$
- D $r = \sqrt{\frac{A}{I}}$

Answer: B

Question 155

Strain energy due to axial deformation is given by

(σ : resultant stress

P : axial load

Δ : deformation

ϵ : strain

E : modulus of elasticity)

- A $\sigma\epsilon$
- B $P\Delta$
- C $\frac{\sigma^2}{2E}$
- D $\frac{1}{2}P\Delta$

Answer: D

Question 156

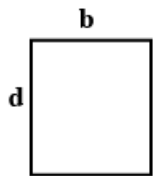
In a cantilever beam subjected to general loading, the maximum bending moment is at

- A fixed end
- B free end
- C mid-span
- D quarter-span

Answer: A

Question 157

Moment of inertia of rectangular section shown in Fig. about its horizontal centroidal axis is



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

Answer: C

Question 158

Ratio of length of column to the minimum radius of gyration of the cross-sectional area of the column is known as

- A Slenderness ratio
- B Bucking ratio
- C Crippling ratio
- D Compressive ratio

Answer: A

Question 159

A linear force-deformation relation is obtained in materials

- A having elastic stress-strain property
- B having plastic stress-strain property
- C following Hooke's law
- D which are rigid elastic materials

Answer: C

Question 160

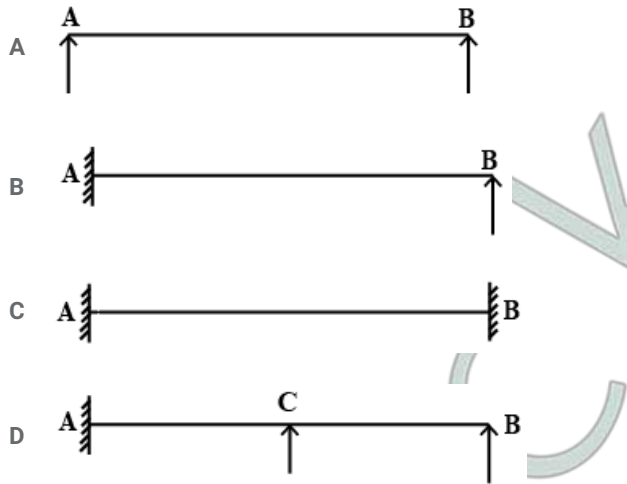
The property of a material by which can be beaten or rolled into plates, is called

- A malleability
- B ductility
- C plasticity
- D elasticity

Answer: A

Question 161

Which of the beam given in the following Figs. is a determinate beam?



Answer: A

Question 162

The effective slenderness ratio cantilever column is

- A $0.5L/r$
- B L/r
- C $\sqrt{2}L/r$
- D $2L/r$

Answer: D

Question 163

The top diameter, bottom diameter and the height of the steel mould used slump test are

- A 10 cm, 20 cm, 30 cm
- B 10 cm, 30 cm, 20 cm
- C 20 cm, 10 cm, 30 cm
- D 20 cm, 30 cm, 10 cm

Answer: A

Question 164

The early high strength of rapid hardening cement is due to its

- A increased content of gypsum
- B burning at high temperature
- C increased content of cement
- D higher content of tricalcium

Answer: D

Question 165

Di-calcium silicate (C_2S)

- A hydrates rapidly
- B generates less heat of hydration
- C hardens rapidly
- D has less resistance to sulphate attacks

Answer: B

Question 166

Separation of coarse aggregates from concrete during transportation, is known as

- A bleeding
- B creeping
- C segregation
- D evaporation

Answer: C

Question 167

The resistance of an aggregate to wear is known is

- A impact value
- B abrasion resistance
- C shear resistance
- D crushing resistance

Answer: B

Question 168

If fineness modulus of a sand is 2.5, it is graded as

- A very fine sand
- B fine sand

C medium sand

D coarse sand

Answer: B

Question 169

Water-cement ratio is measured — of water and cement used per cubic metre of concrete

A volume by volume

B weight by weight

C weight by volume

D volume by weight

Answer: B

Question 170

To prevent segregation, the maximum height for placing concrete, is

A 100 cm

B 125 cm

C 150 cm

D 200 cm

Answer: A

Question 171

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

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

B $\frac{1}{2}$ mean dimension

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

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

Answer: C

Question 172

The fineness of cement can be found out by sieve analysis using IS sieve number

A 20

B 10

C 9

D 6

Answer: C

Question 173

For batching 1 : 2 : 4 concrete mix by volume the ingredients required per bag (50 kg) of cement are

- A 100 litres of fine aggregates : 140 litres of coarse aggregates
- B 100 kg of fine aggregates : 200 litres of coarse aggregates
- C 70 kg of fine aggregates : 140 kg of coarse aggregates
- D 70 litres of fine aggregates : 140 litres of coarse aggregates

Answer: B

Question 174

Bulking is

- A increase in volume of sand due to moisture which keeps sand particles apart
- B increase in density of sand due to impurities like clay, organic matter
- C ramming of sand so that it occupies minimum volume
- D compacting of sand

Answer: A

Question 175

The concrete cubes are prepared, cured and tested according to Indian Standards code number

- A IS : 515
- B IS : 516
- C IS : 517
- D IS : 518

Answer: B

Question 176

Workability of concrete for a given water content is good if the aggregates are

- A angular aggregates
- B flaky aggregates
- C rounded aggregates
- D irregular aggregates

Answer: C

Question 177

Generally, strength of concrete is considered negligible/very low in

- A Compression
- B Tension

- C Fatigue
- D None of the above

Answer: C

Question 178

As the cement sets and hardens, it generates heat. This is called

- A Heat of hydration
- B Latent heat
- C heat of vaporisation
- D Sensible heat

Answer: A

Question 179

In concrete, while hand mixing is adopted excess cement to be added is

- A 4 %
- B 10 %
- C 14 %
- D 20 %

Answer: B

Question 180

For constructing road pavements, the type of cement generally used is

- A ordinary Portland cement
- B rapid hardening cement
- C low heat cement
- D blast furnace slag cement

Answer: B

Question 181

A very comfortable type of stair for usage is

- A straight
- B dog legged
- C open newel
- D circular

Answer: C

Question 182

If the area of tension reinforcement provided is less than required for a balanced section, then the RCC beam is called

- A over reinforced
- B neutral reinforced
- C under reinforced
- D bottom reinforced

Answer: C

Question 183

In limit state of collapse for direct compression, the maximum axial compressive strain in concrete is

- A 0.002
- B 0.003
- C 0.0035
- D 0.004

Answer: A

Question 184

A reduction factor C_r to load carrying capacity for a long rcolumn of effective length L_e and width b is applied as eobtained from following expression:

- A $1 - \frac{L_e}{24b}$
- B $1.25 - \frac{L_e}{36b}$
- C $1.25 - \frac{L_e}{48b}$
- D $1.5 - \frac{L_e}{60b}$

Answer: C

Question 185

A T-beam behaves are rectangular beam of a width equal to its flange if its neutral axis

- A falls within the flange
- B falls below the flange
- C coincides with the geometrical centre of the beam
- D falls below the centroidal axis of the beam

Answer: A

Question 186

If τ_v is the nominal shear stress, τ_c is design shear strength of concrete and $\tau_{c, \max}$ is the maximum design shear strength of concrete which of the following statements is correct?

- A If $t_v > t_{c,max}$, section is to be designed for shear.
- B If $t_v > t_{c,max}$, minimum shear reinforcement is to be provided
- C If $t_v > t_c$, minimum shear reinforcement is to be provided
- D If $t_v > t_c$, maximum shear reinforcement is to be provided

Answer: C

Question 187

The minimum clear cover (in mm) for the main reinforcement in column, according to IS : 456-2000 is

- A 20
- B 25
- C 40
- D 50

Answer: C

Question 188

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 189

In an RCC section of effective depth vertical stirrups are provided to resist shear, their maximum spacing measured along the axis of the member as per IS : 456-2000 should not exceed

- A 0.25 d
- B 0.50 d
- C 0.75 d
- D 1.00 d

Answer: C

Question 190

For a continuous slab of 3 m × 3.5 m size, the minimum overall depth of slab satisfy vertical deflection limit is

- A 5 cm
- B 7.5 cm
- C 10 cm

D 15 cm

Answer: B

Question 191

As per IS : 800, the factor of safety adopted with respect to the yield stress of steels is

A 1.45

B 1.5

C 1.67

D 2.0

Answer: C

Question 192

A tie is a

A tension member

B compression member

C flexural member

D torsion member

Answer: A

Question 193

The slenderness ratio of lacing bars should not exceed

A 120

B 145

C 180

D 100

Answer: B

Question 194

Bearing stiffeners are designed as

A beams

B beams-ties

C ties

D column

Answer: D

Question 195

The maximum allowable slenderness ratio for members carrying compressive load due to during wind and seismic force only is

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

Answer: B

Question 196

The throat in a fillet weld is

- A large side of the triangle of the fillet
- B hypotenuse of the triangle of the fillet
- C smaller side of the triangle of the fillet
- D perpendicular distance from the root the hypotenuse

Answer: D

Question 197

The size of a rivet is identified by

- A diameter of shank
- B diameter of head
- C length of shank
- D shape of head

Answer: A

Question 198

Horizontal stiffeners are needed in plate girders if the thickness of web is less than

- A 6 mm
- B $\text{Depth} / 200$
- C $\text{Span} / 500$
- D Flange thickness

Answer: B

Question 199

Permissible stress may also be known as

- A ultimate stress
- B working stress
- C limit stress

D yield stress

Answer: B

Question 200

The maximum permissible stress for power driven field rivet in bearing on rivet is

A $100N/mm^2$

B $250N/mm^2$

C $270N/mm^2$

D $300N/mm^2$

Answer: C