RRB NTPC Tier I Official Paper (Held On: 27 Apr 2016 Shift 1) (Previous Year Paper)

RRB NTPC • 2016 • 100 questions • 90 minutes • Answer key and solutions

Take this paper as a timed mock test

Practise under exam conditions, then review your answers after you submit.

yourmocktest.com/pyq/rrb-ntpc/rrb-ntpc-tier-i-official-paper-held-on-27-apr-2016-shift-1-previo…

Scan the QR code or click the link to open it.

Q1. Who along with Bhagat Singh, was the main accused in Assembly Bomb Case?

A, Ram Prasad Bismil
B. Ashafaqulla
C. Surya Sen
D. Batukeshwar Dutta

(a) C
(b) B
(c) D
(d) A

Q2. In the Union Budget 2015-16, two new IIMs will be opened in which of the following states?

A. Jammu & Kashmir, Punjab
B. Andhra Pradesh, Punjab
C. Andhra Pradesh, Jammu & Kashmir
D. Jammu & Kashmir, Bihar

(a) B
(b) D
(c) A
(d) C

Q3. CDM stands for:

A. Clean Development Mechanism
B. Carbon Degeneration Mechanism
C. Carbon Degeneration Mission
D. Cash Deposit Mechanism

(a) B
(b) C
(c) A
(d) D

Q4. R is P's father's nephew. S is P's cousin but not the brother of R. How is S related to R?

A. Father
B. Sister
C. Mother
D. Aunt

(a) B
(b) C
(c) D
(d) A

YourMockTest.com — Free Study Material

Q5. Which city is known as the City of Pearls?

(a) Kanpur
(b) Nagpur
(c) Hyderabad
(d) Pune

Q6. On selling rice for Rs. 45 per kg. a shopkeeper bears loss of 20%. To earn a profit of 20%, the selling price should be.

A. Rs. 67.50
B. Rs. 65
C. Rs. 70
D. Rs. 60

(a) B
(b) D
(c) A
(d) C

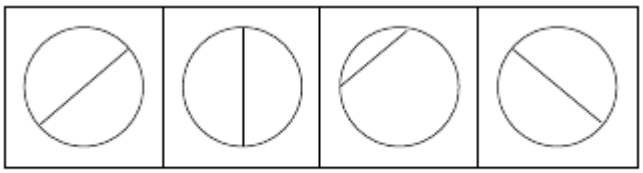
Q7. Read the statements and Select a Conclusion out of the given alternatives.

Statement: Most garments in that shop are expensive.

A. There are no cheap garments available in that shop.
B. Handloom garments in that shop are cheap.
C. There are cheap garments also in that shop.
D. Some garments in that shop are expensive.

(a) A
(b) C
(c) B
(d) D

Q8. Choose the figure which is different from the rest three.



(a) 1
(b) 2
(c) 3
(d) 4

Q9. Shivam industries installed a flour mill for Rs. 8,00,000. If the fixed annual rate of depreciation is 5% then find the price of the flour mill after 3 years?

A. Rs. 685900
B. Rs. 714000
C. Rs. 678000
D. Rs. 599900

(a) B
(b) D
(c) C
(d) A

YourMockTest.com — Free Study Material

Q10. Zeatin is produced in _____ and transported to _____ to the xylem where it promotes cell division.

A. Shoots, Roots
B. Roots, shoots
C. Stems, Leaves
D. Leaves, Stems

(a) C
(b) A
(c) B
(d) D

Q11. Which of the following term is associated with Hockey?

A. Faceoff
B. Kickoff
C. Offside
D. Bodyline

(a) A
(b) D
(c) C
(d) B

Q12. Who among the following was NOT a chief minister before he/she became the Prime Minister of India?

A. Morarji Desai
B. Charan Singh
C. Indira Gandhi
D. V.P. Singh

(a) A
(b) B
(c) C
(d) D

Q13. Which country topped the list on "World Happiness Index", 2015 published by the Sustainable Development Solutions Network (SDSN)?

A. Bhutan
B. Switzerland
C. Iceland
D. Norway

(a) B
(b) D
(c) A
(d) C

Q14. Mecca Masjid, Hyderabad was completed by:

A. Muhammad Quli Qutb Shah
B. Jahangir
C. Qutb Shahi
D. Aurangzeb

(a) C
(b) B
(c) D
(d) A

YourMockTest.com — Free Study Material

Q15. If A + B = 90° and cos B = 1/3; then the value of sin A is:

A. 1/2

B. 1/4

C. 1/3

D. 2/3

(a) C

(b) B

(c) D

(d) A

Q16. Which among them is the largest network in terms of area?

A. MAN

B. WAN

C. Intranet

D. Internet

(a) A

(b) D

(c) B

(d) C

Q17. _____ are the most intelligent mammals on earth.

A. Dolphins

B. Elephants

C. Deer

D. Hippos

(a) D

(b) B

(c) A

(d) C

Q18. Four pair of words are given below out of which three are alike in some manner and one pair is different. Which is different from the rest?

(a) Coins : Numismatics

(b) Stamps : Phillumenist

(c) Books : Bibliophilist

(d) Post cards : Deltiologist

Q19. If $x^2 = 25^2 – 15^2$, then find the value of x.

A. 40

B. 50

C. 20

D. 25

(a) B

(b) A

(c) C

(d) D

Q20. _____ enacted during an emergency imposed by Mrs. Indira Gandhi, is also known as mini constitution because of important & large number of changes made to it.

A. 42^(nd) Amendment Act

B. 44^(th) Amendment Act

C. 74^(th) Amendment Act

YourMockTest.com — Free Study Material

D. 73^(rd) Amendment Act

(a) D
(b) A
(c) C
(d) B

Q21. In a certain code language, if SIGN is coded as 8367 and DIRECT is coded as 134259, then SIREN will be coded as?

(a) 83472
(b) 84327
(c) 83247
(d) 83427

Q22. Which of the following is NOT true about Frictional force?

A. Friction is the force that opposes the relative motion of two surfaces in contact.

B. The force of friction that acts when a body is moving (sliding) on a surface is called sliding friction.

C. Friction in machines wastes energy and also causes wear and tear.

D. Rolling friction is much more than sliding friction, the use of ball bearings in a machine considerably reduces friction.

(a) D
(b) A
(c) C
(d) B

Q23. In which year did Ole Romer measure the speed of light for the first time in history?

A. 1776

B. 1676

C. 1876

D. 1867

(a) A
(b) D
(c) B
(d) C

Q24. Calculate the simple interest if Rs. 1800 is invested for 10 years at a rate of 5% per annum.

A. Rs. 900

B. Rs. 450

C. Rs. 1800

D. Rs. 2700

(a) A
(b) B
(c) C
(d) D

Q25. Indira Gandhi National Centre for the Arts is headquartered at:

A. New Delhi

B. Kolkata

C. Lucknow

D. Mumbai

(a) B
(b) D
(c) C
(d) A

YourMockTest.com — Free Study Material

Q26. Find out the greatest four-digit number when divided by 8, 12, 16 leaves 2 as the remainder in every case?

A. 9984
B. 9985
C. 9986
D. 9987

(a) B
(b) C
(c) D
(d) A

Q27. Where did the Indian Independence League form in 1907?

A. Surat
B. Calcutta
C. California
D. Berlin

(a) A
(b) C
(c) D
(d) B

Q28. A loan of Rs. 305 was taken at a certain rate per annum of compound interest, for 3 years. After three years the amount was Rs. 670, calculate the rate of compound interest.

A. 30%
B. 35%
C. 33%
D. 25%

(a) C
(b) B
(c) A
(d) D

Q29. Pankaj Advani clinched his 13th World title after winning the World 6-Red Snooker Championship by defeating _____ of China.

A. Li Hang
B. Chen Zhe
C. Yan Bingtao
D. Lu Ning

(a) C
(b) A
(c) D
(d) B

Q30. Acid Rain has pH value of

A. 5.5 or less
B. 12.5 or more
C. 10.5 or more
D. 8.5 or more

(a) A
(b) D
(c) B
(d) C

YourMockTest.com — Free Study Material

Q31. Read the statements and select a conclusion from the given alternatives:

Statement:

All tables are instruments.

All instruments are pianos.

Conclusion:

I. All pianos are instruments.

II. All tables are pianos.

(a) Only I conclusion follows
(b) Only II conclusion follows
(c) Either I or II follows
(d) Neither I nor II follows

Q32. First human who got married in space is:

A. Yuri Denver

B. Yuri Johnson

C. Yuri Malenchenko

D. David Malenchenk

(a) A
(b) D
(c) C
(d) B

Q33. What is the name of an ecologically clean rocket developed by Russia based space research center?

A. Angara

B. Vostok

C. Korolev

D. Luna

(a) C
(b) A
(c) D
(d) B

Q34. The factors of $x^2 + 8x + 12$ are:

A. $(x + 6)(x + 2)$

B. $(x - 6)(x + 2)$

C. $(x - 4)^2$

D. $(x + 6)(x - 2)$

(a) B
(b) A
(c) C
(d) D

Q35. Insert the missing number marked as '?'.

18	**24**	**32**
12	14	16
3	?	4
72	112	128

(a) 2
(b) 3
(c) 4

YourMockTest.com — Free Study Material

(d) 5

Q36. The International Cricket Council (ICC), the international governing body of Cricket founded in 1909 by representatives from England, Australia and South Africa, was initially known as:

A. International Cricket Conference

B. International Cricket Council

C. Imperial Cricket Council

D. Imperial Cricket Conference

(a) B
(b) A
(c) D
(d) C

Q37. Read the information and answer the question based on it

In an examination, a student gets an average of 76.2 marks. The total marks for the five subjects are 500. His marks in 4 subjects are mentioned; calculate the marks obtained by the students in Social science marked as “x” in the table below.

Subject	Maths	English	Sanskrit	Science	Social Science
Marks Obtained	76	87	83	78	X

A. 60

B. 58

C. 57

D. 65

(a) C
(b) D
(c) B
(d) A

Q38. In a right - angled triangle, the hypotenuse is 4 cm longer than the perpendicular which is 4 cm longer than the base. Calculate the length of the hypotenuse.

A. 12 cm

B. 10 cm

C. 20 cm

D. 15 cm

(a) C
(b) A
(c) B
(d) D

Q39. By selling 33m clothes, a person gains cost price of 11m clothes. Find the gain %.

A. 30%

B. 33.33%

C. 25%

D. 35%

(a) C
(b) D
(c) B
(d) A

Directions

Answer the questions based on the following bar chart:

YourMockTest.com — Free Study Material

The following bar chart shows the trends of mutual funds investments into India from all over the world.



Q40. What was absolute difference in the mutual funds investments to India in between 1996 and 1997?

A. 7.29

B. 7.13

C. 8.13

D. 7.77

(a) D
(b) C
(c) A
(d) B

Q41. If India mutual fund investments from countries was proportionately the same in 1992 and 1997 as the total mutual funds investments from all over the world and if the mutual funds investments in 1992 from the countries were Euro 2 million.

What was the amount of mutual funds investments from the countries in 1997?

A. 11

B. 10.72

C. 11.28

D. 11.45

(a) A
(b) B
(c) C
(d) D

Q42. Which year exhibited the highest growth in mutual funds investments in India over the period shown?

A. 1993

B. 1994

C. 1995

D. 1996

(a) C
(b) A
(c) B
(d) D

Q43. What is the ratio of radius of incircle and circumcircle for an equilateral triangle with an area of $22\sqrt{3}$ square units?

A. ½

B. ¼

C. 1/3

D. 2/3

(a) C
(b) B
(c) A
(d) D

YourMockTest.com — Free Study Material

Q44. If in a certain language, STRING is coded as TSIRGN, how is RANDOM coded in that code?

(a) ANRDMO
(b) ARDONM
(c) ARDNMO
(d) ADRONM

Q45. The average of 5 consecutive numbers is 50, then difference between “product of largest and smallest number” with “product of fourth and second number” is:

A. 3
B. - 6
C. 0
D. 10

(a) A
(b) D
(c) C
(d) B

Q46. "Group of Monuments at Mahabalipuran one of the "UNESCO World Heritage Site" founded by the Pallava kings is in _____ district of _____.

A. Thanjavur, Tamil Nadu
B. Kancheepuram, Tamil Nadu
C. Sivagangai, Tamil Nadu
D. Siligiris, Tamil Nadu

(a) A
(b) D
(c) B
(d) C

Q47. Insert the missing character marked as ‘?’.

13	**12**	**5**
17	15	8
25	24	?
29	21	20

(a) 7
(b) 9
(c) 15
(d) 11

Q48. In a certain code language, if COTTON is coded as 325526 and WOOLEN is coded as 122976, then TOWEL will be coded as?

(a) 12579
(b) 21795
(c) 52179
(d) 79125

Q49. The value of √0.0144 is:

A. 0.12
B. 0.012
C. 1.2
D. 0.0012

(a) A

YourMockTest.com — Free Study Material

(b) D
(c) B
(d) C

Q50. Calculate the sum of squares from 1 to 9.

A. 284
B. 285
C. 385
D. 380

(a) B
(b) C
(c) D
(d) A

Q51. Atmosphere of Venus most abundantly contains which of the following gases?

A. Nitrogen
B. Hydrogen
C. Oxygen
D. Carbon dioxide

(a) A
(b) B
(c) D
(d) C

Q52. Aaton Van Leewan Hock is famous for the discovery of _____.

A. Microscope
B. Nylon
C. Laser
D. Radio valve

(a) B
(b) C
(c) D
(d) A

Q53. A thief drives his motorcycle at a speed of x km/hr. The policemen started following him in a jeep after 4 hours and catches in 4 hours. If the average speed of jeep of policemen is 40 km/hr, then calculate the speed in km/hr for the thief's motorcycle?

A. 30
B. 36
C. 45
D. 20

(a) C
(b) D
(c) A
(d) B

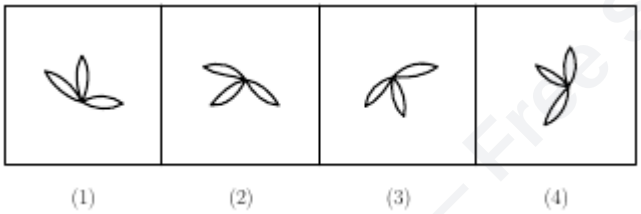
Q54. A map is drawn at a scale of 2 mm for 500 kms. Two places are marked at the distance of 3.6 mm; calculate the distance (in kms) between these two places?

A. 900
B. 800
C. 750
D. 860

YourMockTest.com — Free Study Material

(a) D
(b) A
(c) C
(d) B

Q55. Choose the figure which is different from the rest three.



(a) 1
(b) 2
(c) 3
(d) 4

Q56. _____often referred to as shock treatment, is a psychiatric treatment in which seizures are electrically induced in patients to provide relief from psychiatric illness.

A. Electromyography (EMG)
B. Electrocardiogram (ECG)
C. Electroencephalography (EEG)
D. Electroconvulsive therapy (ECT)

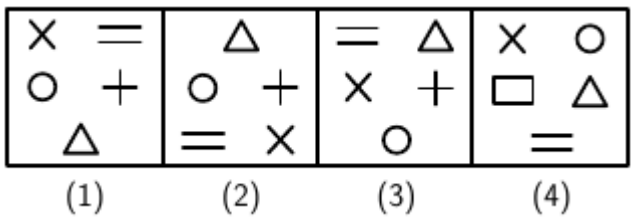
(a) C
(b) D
(c) A
(d) B

Q57. Find out the LCM of 3^5, 3^{11}, 3^(- 11)and 3^(14) _____

A. 3^5
B. 3^{11}
C. 3^(-11)
D. 3^(14)

(a) D
(b) A
(c) B
(d) C

Q58. Choose the figure which is different from the rest three.



(a) 1
(b) 2
(c) 3
(d) 4

Q59. What is the measure of temperature considered as normal in human body?

A. 95 degree F

B. 97 degree F

C. 98.6 degree F

D. 96.8 degree F

(a) B
(b) D
(c) C
(d) A

Q60. If x - √x = 20; Find the value of √x.

A. 5

B. 6

C. 8

D. 7

(a) D
(b) B
(c) C
(d) A

Q61. What is the present Personal Income Tax exemption limit for male individuals below 60 years of age & HUF (FY2015-16)?

A. Rs. 2.5 lakhs

B. Rs. 3 lakhs

C. Rs. 1.5 lakhs

D. Rs. 4 lakhs

(a) B
(b) C
(c) A
(d) D

Q62. _____ is used to control the fission reaction rate in a nuclear reactor as it absorbs neutron without itself getting into fissioning.

A. Heavy water

B. Graphite

C. Water

D. Boron

(a) A
(b) D
(c) B
(d) C

Q63. Insert the missing character marked as '?'.

3	**15**	**4**
7	38	5
3	?	5

(a) 15
(b) 18
(c) 19
(d) 20

YourMockTest.com — Free Study Material

Q64. A man can row his boat at speed of 4 km/hr and he finds that the time taken rowing upstream is double to that taken downstream. Find the speed of the stream (in km/hr).

A. 1.5

B. 1.3

C. 2

D. 1

(a) D
(b) A
(c) B
(d) C

Q65. Insert the missing character marked as '?'.

1	2	3
11	7	5
120	45	?

(a) 19
(b) 17
(c) 16
(d) 15

Q66. Read the statements and select a conclusion from the given alternatives:

Statement:

Some mats are brooms.

All the pencils are brooms

Conclusion:

I. Some mats are pencils.

II. Some brooms are mats.

(a) Only I conclusion follows
(b) Only II conclusion follows
(c) Either I or II follows
(d) Neither I nor II follows

Q67. Read the statements and select a conclusion out of the given alternative.

Statement: An industry worker has four children. No one else in the industry has four children.

(a) All workers in the industry have four children each.
(b) Everybody in the industry has children.
(c) Some of the industry workers have more than four children.
(d) Only one worker in the industry has exactly four children.

Q68. Calculate the difference between the squares of the largest and smallest two - digit prime numbers.

A. 9298

B. 9892

C. 9292

D. 9288

(a) D
(b) C
(c) A
(d) B

YourMockTest.com — Free Study Material

Q69. The average weight of 30 students in a class is 25 kgs. If the weight of the class teacher is added, the average weight increase by 2 kgs. The weight of the class teacher (in kgs) is:

A. 86

B. 84

C. 81

D. 87

(a) B
(b) A
(c) D
(d) C

Q70. The huge storm known as Great red spot is associated with which planet?

A. Mars

B. Venus

C. Pluto

D. Jupiter

(a) B
(b) A
(c) C
(d) D

Directions

Directions: Read the information carefully and answer the following questions:

Six girls are sitting in a circle facing to the centre of the circle. They are Priya, Neha, Rashmi, Sonali, Tina and Veera. Tina is not between Neha and Sonali but some other one. Priya is next to these left of Veera. Rashmi is 4^(th) to the right of Priya. Tina sits immediate right of Veera.

Q71. Which one is sitting just right to Veera?

(a) Priya
(b) Tina
(c) Rashmi
(d) Sonali

Q72. What is the position of Tina?

(a) Just next to the right of Neha
(b) Second to the left of Priya
(c) Between Neha and Rashmi
(d) To the immediate right of Veera

Q73. If Priya and Rashmi interchange their positions then which of the following pair will sit together?

(a) Rashmi & Tina
(b) Priya & Veera
(c) Veera & Tina
(d) Neha & Veera

Q74. Read the statements and select a conclusion from the given alternative:

Statement:

Some doctors are kings.

All the kings are handsome.

Conclusion:

I. All the doctors are handsome

II. All the kings are doctors.

(a) Only I conclusion follows

YourMockTest.com — Free Study Material

(b) Only II conclusion follows
(c) Either I or II follows
(d) Neither I nor II follows

Q75. Winner of 2015 "United Nations Champions of the Earth" award in the category Policy Leadership is _____

A. Sheikh Hasina
B. Paul Polman
C. Narendra Modi
D. Barack Obama

(a) A
(b) C
(c) B
(d) D

Q76. Manish, Mukesh and Sachin are Accountants. Mukesh can file a return in 5 hours and Sachin in 4 hours alone. All three together can do it in 2 hours. In what time (in hrs.) will Manish do the work?

A. 15
B. 20
C. 17
D. 10

(a) C
(b) B
(c) A
(d) D

Q77. Who has recently been appointed as the Chief of New Development Bank of BRICS country, has also served as the chairman of Infosys Ltd., and was non-Executive chairman of ICICI Bank in the past?

A. K.V. Kamath
B. Nandan Nilekani
C. Azim Premji
D. Chanda Kochhar

(a) B
(b) C
(c) A
(d) D

Q78. _____ are atoms/molecules/ions containing the same number of electrons.

A. Isotones
B. Isotopes
C. Isoelectronic
D. Valence Isoelectronic

(a) C
(b) A
(c) D
(d) B

Q79. The computer system which does not require any storage device?

A. Analog
B. Digital
C. Hybrid
D. Third generation computer

(a) B

YourMockTest.com — Free Study Material

(b) A
(c) C
(d) D

Q80. Fertilization of sperm with the ovum takes place in _____
A. Uterus
B. Cervix
C. Fallopian Tube
D. Ovary
(a) B
(b) C
(c) A
(d) D

Q81. If in a certain language, TOGGLE is coded as OTGGEL, how is KEPLER coded in that code?
(a) EEKLPR
(b) PREEKL
(c) RPEEKL
(d) EKLPRE

Q82. Read the statement and select a conclusion out of the given alternatives.
Statement:
Movies convince viewers that the likelihood of their becoming the victim of a violent crime is extremely high; at the same time by their very nature, movies persuade viewers to passively accept whatever happens to them.
(a) Movies viewing promotes criminal behavior.
(b) Movies viewers are most likely to be victimized than others.
(c) People should not watch movies.
(d) Movies promotes a feeling of helpless vulnerability in viewers.

Q83. South West Monsoon generates in _____
A. Arabian Sea
B. Pacific Ocean
C. Bay of Bengal
D. Himalayas
(a) C
(b) B
(c) D
(d) A

Q84. _____ is the most electropositive and ____ is the most electronegative element of the third period of the modern periodic table.
A. Sodium, Potassium
B. Magnesium, Aluminium
C. Sodium, Chlorine
D. Aluminium, Chlorine
(a) B
(b) D
(c) A
(d) C

YourMockTest.com — Free Study Material

Q85. If 22, x, 88 are in a continued proportion, find the value of x.

A. 24

B. 33

C. 44

D. 36

(a) A

(b) C

(c) D

(d) B

Q86. Rajat is the brother of Sanjay and Manish is the father of Rajat. Jay is the brother of Shreya who is the daughter of Sanjay. Who is the uncle of Jay.

(a) Rajat

(b) Sanjay

(c) Manish

(d) Cannot be determined

Q87. P is the brother of Q. Q is the brother of R. P is the son of S. Based on these three statements, which of the following statements is not true?

(a) Q is the brother of P.

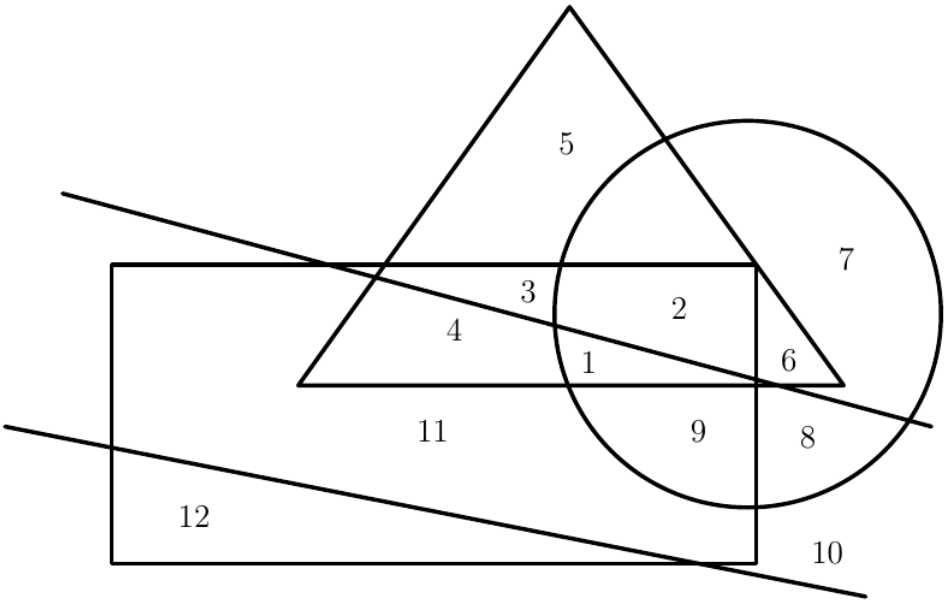
(b) Q is the son of S.

(c) P is the brother of R.

(d) S is the father of Q.

Directions

Directions: In the following figure the circle stands for unemployed, the smaller rectangle stands for lazy, the triangle stands for urban and the larger rectangle stands for foolish. Study the figure carefully and answer the questions that follow:



Q88. The number of non-urban, unemployed people who are neither foolish nor lazy are

(a) 12

(b) 11

(c) 10

(d) 7

Q89. The number of non-urban, unemployed, lazy and foolish people are

(a) 8
(b) 9
(c) 10
(d) 11

Q90. The number of Unemployed, lazy, urban and foolish people are

(a) 9
(b) 2
(c) 1
(d) 3

Q91. What is the local name given to the parliament of Pakistan?

A. Majilis
B. Majilis-e-Shoora
C. Saeima-e-majlis
D. Jatia Parliament

(a) D
(b) A
(c) C
(d) B

Q92. Which state of India has the largest number of cotton mills?

A. Karnataka
B. Uttar Pradesh
C. Maharashtra
D. Gujarat

(a) D
(b) C
(c) A
(d) B

Q93. Find the maximum area of a square field which is surrounded by a rope of 100 meters?

A. 500 m^2
B. 625 m^2
C. 400 m^2
D. 100 m^2

(a) D
(b) C
(c) B
(d) A

Q94. On the basis of Memory size & performance, which type of computer is known as "Big iron"?

A. Micro Computer
B. Mini Computer
C. Main Frame
D. Super Computer

(a) D
(b) A
(c) B
(d) C

YourMockTest.com — Free Study Material

Q95. If 90% of A = 30% of B and B = x% of A, find x.

A. 600
B. 900
C. 300
D. 1200

(a) A
(b) D
(c) B
(d) C

Q96. Which of the following fractions is largest?

A. ¾
B. 4/5
C. 5/6
D. 7/8

(a) C
(b) A
(c) D
(d) B

Q97. The value of sin 60 is:

A. √ ½
B. √3/2
C. 1/√2
D. √1/√2

(a) D
(b) A
(c) C
(d) B

Q98. Which of the following hormone is NOT secreted by the Pituitary gland?

A. Thyroid-stimulating hormone (TSH)
B. Prolactin
C. Vasopressin
D. Somatostatin

(a) A
(b) C
(c) D
(d) B

Q99. A, B and C are employed to complete a work in Rs. 784. If A and B together complete 23/28 of the work. Calculate the wages (in Rs.) paid to C?

A. 280
B. 140
C. 70
D. 56

(a) A
(b) D
(c) C
(d) B

YourMockTest.com — Free Study Material

Q100. Find the value of 200 × 20 × 2 × 0.2 × 0.02 × 0.002 = ?

A. 0.064

B. 0.64

C. 64

D. 640

(a) C

(b) A

(c) D

(d) B

ANSWER KEY

1	c	2	d	3	c	4	a	5	c	6	c	7	b	8	c	9	d	10	c
11	a	12	c	13	a	14	c	15	a	16	b	17	c	18	b	19	c	20	b
21	d	22	a	23	c	24	a	25	d	26	b	27	b	28	c	29	a	30	a
31	b	32	c	33	b	34	b	35	b	36	c	37	a	38	a	39	c	40	d
41	a	42	d	43	c	44	c	45	a	46	c	47	a	48	c	49	a	50	a
51	c	52	d	53	b	54	b	55	a	56	b	57	a	58	d	59	c	60	d
61	c	62	b	63	b	64	c	65	c	66	b	67	d	68	a	69	c	70	d
71	b	72	d	73	c	74	d	75	a	76	b	77	c	78	a	79	b	80	b
81	d	82	d	83	d	84	d	85	b	86	a	87	d	88	d	89	b	90	c
91	d	92	b	93	c	94	d	95	d	96	c	97	d	98	c	99	d	100	b

SOLUTIONS

Q1. Answer: (c) D

The correct answer is Option 3.

• Batukeshwar Dutta along with Bhagat Singh was the main accused in Assembly Bomb Case.

• They were members of the Hindustan Socialist Republican Association.

• In 1929, they threw bombs at the Central Legislative Assembly.

• They did not want to injure anyone but wanted to make a statement that they would not bear the colonial rule of Britishers.

• It was against the Public Safety Bill and the Trade Dispute Bill.

• Dutta also initiated a historic hunger strike along with Bhagat Singh to protest against the abusive treatment of Indian political prisoners.

• Ram Prasad Bismil participated in the Mainpuri conspiracy of 1918, and the Kakori conspiracy of 1925.

• He also resisted the British rule in India.

• Ashafaqulla was also a revolutionary like Bhagat Singh and stood against the atrocities of Britishers.

• Surya Sen was best known for leading the 1930 Chittagong armory raid.

Q2. Answer: (d) C

The correct answer is Option 4.

• In the Union Budget 2015-16, two new IIMs were to be opened in Andhra Pradesh, Jammu & Kashmir.

• IIM-Indian Institute of Management

• The IIMs are management education and research institutes in India and are considered the best in India.

• They offer postgraduate, doctoral and executive education programmes.

• The first IIM was established in Kolkata in 1961.

• There are said to be 20 IIMs in India and government continuously work to expand it.

YourMockTest.com — Free Study Material

Q3. Answer: (c) A

• CDM-Clean Development Mechanism.

• The Kyoto Protocol introduced three "flexible mechanisms" – international emissions trading (IET), joint implementation (JI), and the clean development Mechanism (CDM).

• CDM has two main goals: to assist countries without emissions targets in achieving sustainable development and help countries with emission reduction targets in achieving compliance by allowing them to purchase offsets created by CDM projects.

• Kyoto Protocol is an international agreement that aimed to reduce carbon dioxide emissions and the presence of greenhouse gases in the atmosphere. There is a concept of carbon credit trading in this. If one country is unable to control carbon emission, it can buy credit from another country that has emitted less carbon than the goal.

• Clean Development Mechanism under Kyoto provides for emissions reduction projects which generate Certified Emission Reduction units which may be traded in emissions trading schemes.

Q4. Answer: (a) B

Symbol tree:

S is not brother of R that means S is sister of R.

Hence, option 1) is the correct answer.

Q5. Answer: (c) Hyderabad

Hyderabad city of Telangana is known as the City of Pearls as the city deals in pearls and diamonds. Hyderabad is also known as Hi-Tech City and City of Nizams.

City	Sobriquet
Kanpur	Leather City of the World Manchester of The East
Nagpur	Orange City
Hyderabad	City of Pearls Hi-Tech City City of Nizams
Pune	Oxford of the East Queen of Deccan

Q6. Answer: (c) A

SP of the 1 Kg rice = Rs. 45

CP of the 1 kg rice = Rs. 45 × 5/4

New SP of the 1 kg rice = 45 × 5/4 × 6/5 = Rs. 67.50

Q7. Answer: (b) C

A. There are no cheap garments available in that shop. → False (Most garments in that shop are expensive means not all garments in that shop are expensive. Some can be cheap)

B. Handloom garments in that shop are cheap. → False (Nothing is mentioned about handloom garments)

C. There are cheap garments also in that shop. → True (Most garments in that shop are expensive means not all garments in that shop are expensive. Some are cheap)

D. Some garments in that shop are expensive. → False (It is clearly mentioned that most garments in that shop are expensive)

Hence, option 2) is the correct answer.

Q8. Answer: (c) 3

Only on figure 3, the segment is not a diameter of the circle.

So, figure 3 is different from the other figures.

Q9. Answer: (d) A

Given:

Price of the flour mill = Rs. 8,00,000

Rate of depreciation = 5% = 1/20

Calculation:

Total = 20 units and 1 unit depreciated every year

Now, Price of the flour mill after 3 years = 8,00,000 × 19/20 × 19/20 × 19/20 = 685900

Q10. Answer: (c) B

Zeatin is produced in roots and transported to shoots to the xylem where it promotes cell division.

• It is a plant growth hormone in the cytokinin family.
• They basically signal the plant to grow shoots.
• Promotes growth of lateral buds, stimulates cell division, callus initiation, etc.
• Xylem is a transport tissue in vascular plants.
• It transports water and nutrients from roots to stems and leaves.
• It is located in roots, stems, and leaves of the plants.

Q11. Answer: (a) A

• Faceoff is associated with Hockey.
• It is used to begin every game, period, and play of Hockey.
• Other terminologies of Hockey - Center forward, Forward, Boarding, Goaltender, Hockey Puck, Snapshot, etc.
• Kickoff is associated with Football.
• Other terminologies - Back heel, Back Pass, Corner flag, offside, direct free kick, dummy run, one-side pass, etc.
• Bodyline is associated with Cricket.
• Other terminologies - LBW, Beamer, googly, Golden duck, leg-side, offside, etc.

Q12. Answer: (c) C

The correct answer is option 3 i.e. C (Indira Gandhi).

• Indira Gandhi was not a chief minister before he/she became the Prime Minister of India.
• She was the first and only female (till now) Prime Minister of India.
• She was named "Woman of the Millennium" in an online poll organized by the BBC in 1999.
• She was also named by Time magazine among the world's 100 powerful women who defined the last century in 2020.
• She had never been a chief minister.
• Morarji Desai was the 4th Prime Minister of India. He had been the CM of Bombay state in 1952.
• Charan Singh was the 5th Prime Minister of India. He had been the CM of Uttar Pradesh.
• V.P Singh was the 7th Prime Minister of India. He had also been the CM of Uttar Pradesh.

Q13. Answer: (a) B

• Switzerland topped the list on the "World Happiness Index", 2015 published by the Sustainable Development Solutions Network (SDSN).
• The first World Happiness Report was released on April 1, 2012. The index is analyzed on the basis of the Gallup World Poll questionnaire. This questionnaire measures 14 important areas-citizen engagement, diversity, environment, and energy to name a few.
• World Happiness Index 2016: First rank - Denmark.India rank-118
• World Happiness Index 2017: First rank - Norway. India rank-117
• World Happiness Index 2018: First rank - Finland. India rank-133.
• World Happiness Index 2019: First rank-Finland. India rank-140.

Q14. Answer: (c) D

The correct answer is Aurangzeb

Key Points

• Muhammad Quli Qutb Shah had commissioned the construction of the Mecca Masjid in 1614(Completed by Aurangazeb in 1693).
• It is said that commissioned bricks to be made from the soil brought from Mecca, Saudi Arabia.

This is the reason it is called Mecca Masjid.

• If question asks "who started building the mecca mosque", the answer should be Muhammad Quli Qutb Shah
• Whereas if question asks "who completed the Mecca mosque", then the answer must be Aurangazeb

Q15. Answer: (a) C

Given, cos B = 1/3

In ΔABC

cosB = BC/AB ----(1)

sinA = BC/AB ---(2)

From equation (1) and equation (2)

sinA = cosB

=> sinA = 1/3

Q16. Answer: (b) D

• Internet is the largest network in terms of area.

• The Internet allows computer networks around the world to share information with one another. The network uses the Internet protocol suite.

• The United States Department of Defense-funded research into the time-sharing of computers for the purpose of sharing classified information. Other research from individuals was also going on to develop a system of connected networks.

• ARPANET was developed in the starting stage. However, the Internet Protocol Suite (TCP/IP) was standardized in 1982. After advancements in semiconductor technology and optical networking, the internet started to spread in all locations. The Internet was fully commercialized in the U.S. by 1995 and consequently to other parts of the world.

• WAN - Wide Area Network. It extends over a large geographical area but not as wide as the Internet. It consists of two or more LANs. Computers under this network are usually connected through public networks, such as the telephone system.

• MAN - Metropolitan area Network- It covers a larger area than LAN but a smaller area than WAN. It generally ranges from 5 to 50 km. Cable TV Networks can be one of the examples.

• Intranet- It is a private network that can only be accessed by authorized users. "Intra" means internal and it is designed to keep the information confined to a certain group of people.

Q17. Answer: (c) A

• Dolphins are the most intelligent mammals on earth.

• Studies show that they are capable of complex problem solving and have the ability to learn as an individual.

• They can also pass the knowledge onto others.

• Dolphins have highly-developed brains. Research shows that dolphins mirror self-recognition, cultural learning, comprehension of symbol-based communication systems, and an understanding of abstract concepts — comparable to chimpanzees and other great apes.

• Dolphins use echolocation for hunting. They emit "clicks" which work on the principle of echo.

• Dolphins analyzes the echo from the reflected objects as quickly as they keep on swimming.

• Their echolocation can even help them know the kind and size of the objects.

Q18. Answer: (b) Stamps : Phillumenist

Numismatics is the study or collection of currency, including coins, tokens, paper money etc

Bibliophilist is a collector of books.

Deltiologist is the person who collects postcards.

But the person who collects stamps called as Philatelist not Phillumenist.

Phillumenist is the person who collects matchbox or matchbook labels.

Hence, Stamps : Phillumenist is different from the rest.

Q19. Answer: (c) C

Given:

x2 = 252 - 152

1st method

$x^2 = 25^2 - 15^2$

=> $x^2 = 625 – 225$

=> $x = \sqrt{400}$

=> x = 20

2nd method

x2 = 252 - 152

=> $x^2 = (25 + 15)(25 - 15)$ [Because $a^2 - b^2 = (a + b)(a - b)$]

=> $x^2 = 40 \times 10$

=> $x^2 = 400$

=> x = 20

Q20. Answer: (b) A

• 42nd Amendment Act enacted during an emergency imposed by Mrs. Indira Gandhi is also known as mini-constitution because of the important & large number of changes made to it.

• It is considered the most controversial constitutional amendment in history as it attempted to reduce the power of the Supreme Court and High Courts.

• The amendment at that time removed election disputes from the purview of the courts and transferred more power from the state governments to the central government

• The Fundamental Duties of Indian citizens were also laid down.

• It changed the description of Preamble of Indian Constitution from "sovereign democratic republic" to a "sovereign, socialist secular democratic republic". The "unity of the nation" was changed to "unity and integrity of the nation".

• 44th Amendment Act - It was enacted by the Janata Party which had won the 1977 general elections and promised Indian citizens to restore the constitution as it was before the 42nd Amendment Act. However, it could not fulfill its promise. The fundamental right of property was removed under this amendment act.

• 74th Amendment Act - This act provided a common framework for the structure and mandate of urban local bodies to enable them as local Self Government. Constitution of Municipalities took place under this act.

• 73rd Amendment Act -This Amendment provided a Constitutional status to the Panchayati Raj Institutions through the insertion of Article 243 to Part IX of Constitution of India.

Q21. Answer: (d) 83427

Similarly,

Hence, SIREN can be coded as 83427.

Q22. Answer: (a) D

CONCEPT:

• Friction: The property of a surface that opposes the relative motion between two surfaces is called friction.

Friction (f) = μ N

where μ is the coefficient of friction and N is the normal force

There are three types of friction:

• Static friction: The friction that exists between an object at rest and a rough surface on which it is placed, such friction is termed as static friction.

• The coefficient of friction due to this friction is called a static friction coefficient.

• Kinetic friction/sliding friction: The friction between the two surfaces when there is a relative motion between the surfaces then it is called kinetic friction.

• Rolling friction: When a block is rolling (usually a circular body like a ball, tire) on a surface then the friction acting is called rolling friction.

EXPLANATION:

1. Friction opposes the relative motion between two surfaces. So the statement A is true.

2. When the body is moving then the friction acting is called sliding friction. So statement B is true.

3. Friction in machines wastes energy and also causes wear and tear. Statement C is also correct.

4. In the case of rolling motion, there is no relative motion between the two contact surfaces. So there is no work done by the friction in a rolling motion. That's why the rolling friction is less than the sliding/kinetic friction. So statement D is not true.

Q23. Answer: (c) B

• Ole Romer measured the speed of light for the first time in 1676.

• Romer was a Danish astronomer. He observed the eclipses of Jupiter's moon (Io) during the years 1668–1674 which helped him in the calculation of speed of light.

• A discrepancy was observed by him for the time between the eclipses.

• He interpreted this as the difference in the times needed for the light to travel between Jupiter and Earth.

• However, he obtained a value of 214,000 km/s compared to the current value 299,792 km/s.

• The simple reason for incorrect value was that the diameter of Earth's orbit was not accurately known at that time and Romer made a little error in measurement of delay too.

• Ole Romer was the first person to prove that the speed of light is finite.

• There were several attempts to find the correct value of speed but none of them could find an exact answer.

• In 1926, American physicist Albert Michelson used an eight-sided rotating mirror apparatus and found the value to be 299,796 m/s.

• In 1983, an international commission on weights and measures set the speed of light in a vacuum at the calculation we use today: 299,792.458 meters per second.

Q24. Answer: (a) A

P = Rs. 1800, r = 5% and time = 10 years

As we know,

SI = (Prt/100)

SI = (1800 × 5 × 10)/100

SI = 900

Q25. Answer: (d) A

• Indira Gandhi National Centre for the Arts is headquartered in New Delhi.

• It is an autonomous institute under the Ministry of Culture.

• It is functioning as a center for research, academic pursuit and dissemination in the field of the arts.

• The institute was launched on 19 November 1985 by Rajiv Gandhi (Former Prime Minister). However, it was officially established in 1987.

• The institute is visualized as a center encompassing the study and experience of all the arts-interrelated with nature, social structure, and cosmology.

• One of the official goals of this institute is "to foster dialogue between the arts and current ideas in philosophy, science, and technology, with a view toward bridging the gap in intellectual understanding between modern sciences and arts and culture".

• Some of the unites of IGNCA are Kalanidhi, Kalasoka, Cultural Informatics Laboratory, Sutradhara, etc.

Q26. Answer: (b) C

As we know,

Greatest four digit number is = 9999

LCM of 8, 12, 16 = 2 × 2 × 2 × 2 × 3 = 48

The greatest four digit number which is divisible by 8, 12 and 16 is = 9999 – 15 = 9984

If remainder in each case is 2, then the required number is = 9984 + 2 = 9986

Q27. Answer: (b) C

• The Indian Independence League was formed in 1907 in California.

• The League was founded by Taraknath Das along with Panduranga Khankoje.

• Tarak started "Free Hindustan" in English and Gurmukhi edition.

• Please note that Rash Bihari Bose founded another Indian Independence League in 1942 at Tokyo, Japan to remove the colonial rule of Britishers.

• Subhas Chandra Bose was later invited to join the league and take his command.

• However, branches of Indian Independence Leagues were found and joined by many revolutionists living inside and outside of India.

• The primary objective was to seek independence of Indians from the Britishers.

Q28. Answer: (c) A

P = 305, A = 670 and time = 3 years

As we know,

A = P (1 + r/100)^t

=> 670 = 305 (1 + r/100)³

=> (1 + r/100) = cbrt670/305

=> (1 + r/100) = 1.3

=> r = 30%

Alternate Method

Given:

Principal = Rs. 305

Time = 3 years

Amount = Rs. 670

Formula used:

A = P × (1 + R/100)^T

Where,

A → Amount

P → Principal

R → Rate of interest

T → Time

Calculations:

A = P × (1 + R/100)T

=> 670 = 305 × (1 + R/100)³

=> 134/61 = (1 + R/100)3

=> 2.197 = (1 + R/100)³

=> 2197/1000 = (1 + R/100)³

=> (13/10)³ = (1 + R/100)3

=> 13/10 = 1 + R/100

=> 3/10 = R/100

=> R = 30%

Therefore The required rate of interest is 30%

Q29. Answer: (a) C

Pankaj Advani clinched his 13th World title after winning the World 6-Red Snooker Championship by defeating Yan Bingtao of China.

• Pankaj outplayed Chinese Yan Bingtao by 6-2.

• The final of the world championship was in Bangaluru, Karnataka.

• He also became the first player in the world to hold the world title as well as the continental title at the same time after he had beat Malaysian Keen Hoh Moh.

• He has also won gold in the 2018 World Billiards Championship (Long Up), 2018 World Billiards Championship (150 Up), and 10 Red Snooker Asian Tour 2018.

• Pankaj is a recipient of the Arjuna Award for Billiards & Snooker, Rajiv Gandhi Khel Ratna, Padma Bhushan, Padma Shri.

Q30. Answer: (a) A

Acid Rain has a pH value of 5.5 or less.

• Acid rain means precipitation of acidic components such as Sulfuric or Nitric acid.

• Sulfur dioxide and oxides of nitrogen get into the upper atmosphere by wind or air currents and get mixed with water.

• Normal rain has a pH value of 5.6.

• It is slightly acidic due to the presence of carbon dioxide which gets dissolved into the water forming weak carbonic acid.

• However, acid rain usually has a pH between 4.2 and 4.4 because of the large quantity of acids.

• The major sources of sulphuric dioxide and oxides of nitrogen are the burning of fossil fuels, emission from vehicles, oil refineries, etc.

• Please note pH value of 7 means neutral and pH value more than 7 means alkaline/basic and pH value less than 7 means acidic.

Q31. Answer: (b) Only II conclusion follows

From the given statements we draw the following least possible Venn diagram,

I. All pianos are instruments – It's possible but not definite, hence false.

II. All tables are pianos – It's true

Thus, only conclusion II follows.

Q32. Answer: (c) C

The first human who got married in space is Yuri Malenchenko in August 2003.

• He married Ekaterina Dmitrieva. She was in Texas and Yuri was 240 miles over New Zealand on the International Space Station.

• The rituals took place via a video link.

• Yuri is from Russia. He is now a Test Cosmonaut-Instructor at the Gagarin Cosmonaut Training Center.

• He has had long-duration missions to the Mir Space Station and the International Space Station as well as a Space Shuttle flight.

• He has logged 641 days, 11 hours, and 11 minutes in space including 30 hours and 5 minutes of EVA time in five spacewalks.

YourMockTest.com — Free Study Material

Q33. Answer: (b) A

Angara is the name of an ecologically clean rocket developed by Russia based space research center.

• It was launched in 2014. The launch vehicle was built from scratch since the fall of the Soviet Union.

• Angara 1.2 rocket was lifted off from Russia's Plesetsk Cosmodrome.

• A "mass/dimensional payload simulator" was also put on top of Angara for the second stage of the rocket.

• It ran on "ecologically clean components- oxygen and kerosene".

• The rockets of the Angara family are generally put in low orbit of the Earth.

Q34. Answer: (b) A

Calculation:

$x^2 + 8x + 12$

$\Rightarrow x^2 + 6x + 2x + 12$

$\Rightarrow x(x + 6) + 2(x + 6)$

$\Rightarrow (x + 6)(x + 2)$

Q35. Answer: (b) 3

The logic followed here is:

1^(st) Term × 2^(nd) Term ÷ 3^(rd)Term = 4^(th)Term

(18 × 12) ÷ 3 = 216 ÷ 3 = 72

(32 × 16) ÷ 4 = 512 ÷ 4 = 128

Similarly,

(24 × 14) ÷ 3 = 336 ÷ 3 = 112

Hence, the missing number is '3'.

Q36. Answer: (c) D

The correct answer is Option 3, i.e Imperial Cricket Conference.

• The International Cricket Council (ICC), the international governing body of Cricket founded in 1909 by representatives from England, Australia, and South Africa, was initially known as Imperial Cricket Conference.

• In 1965, it was renamed as International Cricket Conference and in 1965, it was renamed the International Cricket Council (ICC) in 1989.

• This council organizes various world championships and tournaments.

• ODI World Cup and T-20 World Cup are world-famous.

• There are 104 member nations.

• Headquarters of ICC - Dubai, UAE

• Motto - Cricket for good

• Chairman - Greg Barclay

Q37. Answer: (a) C

Given:

Average marks of 5 subjects = 76.2

Calculation:

Sum of the marks = 5 × 76.2 = 381

Total marks obtained = 76 + 87 + 83 + 78 + x

According to the question

76 + 87 + 83 + 78 + x = 381

$\Rightarrow 324 + x = 381$

$\Rightarrow x = 381 - 324$

$\Rightarrow x = 57$

Q38. Answer: (a) C

Let base of the triangle be x cm

Perpendicular of the triangle = x + 4

Hypotenuse of the triangle = x + 4 + 4 = x + 8

As we know,

(Hypotenuse)² = (Base)² + (Perpendicular)²
(x + 8)² = x² + (x + 4)²
=> x² + 64 + 16x = x² + x² + 16 + 8x
=> x² – 8x – 48 = 0
=> x² – 12x + 4x – 48 = 0
=> x(x – 12) + 4(x – 12) = 0
=> (x – 12)(x + 4) = 0
Taking,
=> x – 12 = 0
=> x = 12
Length of the hypotenuse = 12 + 8 = 20 cm

Q39. Answer: (c) B

Let the cost price and selling price of 1 m clothes be Rs x and Rs. y respectively.
According to the question
33y – 33x = 11x
=> 33y = 44x
=> x : y = 3 : 4
Let CP = 3 and SP = 4
Profit = 4 – 3 = 1
Profit % = 1/3 × 100 = 33.33%

Q40. Answer: (d) B

The mutual funds investment to India in 1996 = 24.23
The mutual funds investment to India in 1997 = 31.36
Required difference = 31.36 – 24.23 = 7.13

Q41. Answer: (a) A

Ratio of mutual fund invested in 1992 to 1997 = 5.7x : 31.36x
If the mutual funds investments in 1992 from the countries was = 2 million Euro
5.7x = 2 million Euro
=> x = 2/5.7
The amount of mutual funds investments from the countries in 1997 = 31.36 × 2/5.7 = 11.00 ~ 11 million Euro

Q42. Answer: (d) D

The highest growth in mutual funds investment in India over the period shown in 1996 is = 24.23

Q43. Answer: (c) A

Given:
Area of an equilateral triangle = 22√ 3 sq. units
As we know,
Formula Used:
Circum - radius of the equilateral = a/√3
In - radius of the equilateral = a/2√3
1st Method
Ratio of in-radius to circumradius = a/2√3 : a/√3 = 1 : 2 or 1/2
2nd Method
we can also solve this question by using the given area, but this one is a little bit time taking.
Area of eq. triangle = √ 3a²/4
=>√ 3a2/4 = 22√ 3
=> a = 2√ 22
Now,
Circum - radius of the equilateral = (2√ 22)/√3
In - radius of the equilateral = (2√ 22)/2√3

YourMockTest.com — Free Study Material

Therefore Required ratio = (2√ 22)/2√3 : (2√ 22)/√3 = 1 : 2

Q44. Answer: (c) ARDNMO

Similarly,

Hence, RANDOM is coded as ARDNMO.

Q45. Answer: (a) A

Let the first number be x,

Sum of 5 consecutive number is = 50 × 5 = 250

According to the question

x + x + 1 + x + 2 + x + 3 + x + 4 = 250

=> 5x + 10 = 250

=> 5x = 250 – 10

=> 5x = 240

=> x = 48

Product of smallest and largest = x (x + 4) = 48 × 52 = 2496

Product of fourth and second = (x + 1) (x + 3) = 49 × 51 = 2499

Required difference = 2499 – 2496 = 3

Q46. Answer: (c) B

• "Group of Monuments at Mahabalipuram one of the "UNESCO World Heritage Site" founded by the Pallava kings is in Kancheepuram district of Tamil Nadu.

• It lies on the Coromandel Coast.

• It is believed to have been built in the 7th and 8th centuries.

• There are temples in the shape of chariots, cave sanctuaries, giant open air reliefs, etc.

• The most famous are the five monolithic structures known as Five Rathas.There are believed to be the structure of five pandavas. These Ratha temples are constructed on the style of the Buddhist viharas and chaityas. The unfinished three-storey Dharmaraja Ratha is the largest.

• However, the temples are believed to be dedicated to deities.

• The site has been managed by the Archaeological Survey of India.

Q47. Answer: (a) 7

$5^2 + 12^2 = 13^2$

$8^2 + 15^2 = 17^2$

$20^2 + 21^2 = 29^2$

$7^2 + 24^2 = 25^2$

Hence, the missing character is 7.

Q48. Answer: (c) 52179

Hence,

Hence, TOWEL is coded as 52179.

Q49. Answer: (a) A

Given:

1st method

√0.0144

=> √(0.12 × 0.12)

=> 0.12

2nd Method

√144/10000 = 12/100 = 0.12

Q50. Answer: (a) B

As we know,

Sum of square of first n numbers = 1/6 × n × (n + 1) × (2n + 1)

Sum of square of first 9 numbers = 1/6 × 9 × 10 × 19 = 285

YourMockTest.com — Free Study Material

Q51. Answer: (c) D

The correct answer is option 3 i.e., Carbon dioxide.

Key Points

• The atmosphere of Venus mostly contains Carbon dioxide. (Abundant)

Mistake Points

• There are thick clouds of carbon dioxide and small doses of nitrogen with sulphuric acid clouds also present(not abundant).

• Such composition results in a continuous greenhouse effect making Venus the hottest planet in our solar system.

• This greenhouse effect is the reason that Venus is the hottest planet even though it is far from the sun.

• These heavy clouds even protect the planet from the bombardment of meteors.

• The increasing order of distance of planets from the Sun-Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

• Pluto comes after Neptune but it is considered a dwarf planet.

Q52. Answer: (d) A

• Anton Van Leewan Hock is famous for the discovery of the Microscope.

• The microscope produces enlarged images of small objects. One can study the minute structures.

• These are primarily used in laboratories from biomedical to materials engineering.

• Aaton Van Leewan Hock is commonly known as "the Father of Microbiology". He also discovered vacuole of the cell, bacteria, spermatozoa, the pattern of muscular fiber, etc.

• However, it is pertinent to know that lots of scientists are credited with the invention of the microscope.

• Nylon is said to be invented by Wallace Hume Carothers at DuPont's research facility.

• Theodore Maiman is said to have invented the first practical Laser.

Q53. Answer: (b) D

Given:

Speed of thief = x km/hr

Distance covered by thief in 4 hr = 4x

Speed of police men = 40 km/hr

Relative speed, if same direction = (40 – x) km/hr

Calculation:

According to the question

(40 – x) × 4 = 4x

=> 160 – 4x = 4x

=> 8x = 160

=> x = 160/8

=> x = 20 km/hr

Speed of thief is 20 km/hr.

Q54. Answer: (b) A

Given:

2 mm represents the distance of 500 km

By using unitary method

=> 1 mm = 250 km

=> 3.6 mm = 250 × 3.6 = 900 km

Q55. Answer: (a) 1

Except figure 1, all other figures can be rotated into each other.

Or

All figure moves clockwise direction but figure (1) is an inverted image of the figure (2).

Hence, figure 1 is different from the rest three.

Q56. Answer: (b) D

Electroconvulsive therapy (ECT) often referred to as shock treatment, is a psychiatric treatment in which seizures are electrically induced in patients to provide relief from psychiatric illness.

• Small electric currents are passed through the brain to trigger a brief seizure intentionally.

• It claims to change brain chemistry that can reverse symptoms of certain mental health conditions.

• ECT is used to treat severe depression, severe mania, Catatonia, etc.

• Electromyography (EMG) - It is used to help detect neuromuscular abnormalities. It measures muscle response or electrical activity in response to a nerve's stimulation of the muscle.

• Electrocardiogram (ECG) - It simply records the electrical signal from the heart to check for different heart conditions.The result is shown as waves.

• Electroencephalography (EEG) - It detects the electrical activity in our brain and uses small, metal discs (electrodes) attached to the scalp.

Q57. Answer: (a) D

LCM of 3^5, 3^{11}, 3^(- 11)and 3^(14) is = 3^(14)

If base same, then LCM is maximum power of those expressions.

Q58. Answer: (d) 4

Figure 4 has a rectangle in place of + sign.

Hence, figure 4 is different from the rest three.

Q59. Answer: (c) C

• 98.6 degree F is the measure of temperature considered normal in the human body.

• If someone has a temperature of 100.4°F, it means that he/she is suffering from fever.

• Hypothalamus is a part of the brain. It regulates our internal body temperature.

• If our temperature is too low from the normal temperature, the hypothalamus signals the body to generate and maintain heat. However, if the temperature of the body is too high, heat is given off or sweat is produced to cool the skin.

• Please note that fever develops as a reaction to germs such as viruses or bacteria. Our body produces prostaglandins to fight off germs and it can also raise the temperature of our body.

Q60. Answer: (d) A

Given:

$x - \sqrt{x} = 20$

Concept used:

Using the concept of a quadratic equation

$(a + b)^2 = a^2 + b^2 + 2ab$

Calculation:

Let, $\sqrt{x} = u$

$x - \sqrt{x} = 20$

$\Rightarrow u^2 - u = 20$

$\Rightarrow u^2 - u - 20 = 0$

$\Rightarrow u2 - 5u + 4u - 20 = 0$

$\Rightarrow u(u - 5) + 4(u - 5) = 0$

$\Rightarrow (u - 5)(u + 4) = 0$

$\Rightarrow (u - 5) = 0$ or $(u + 4) = 0$

$\Rightarrow u = 5$ or $u = -4$

$\Rightarrow \sqrt{x} = 5$ or $\sqrt{x} = -4$

Negative value of square root is not possible

$\Rightarrow \sqrt{x} = 5$

Therefore The value of $\sqrt{x}$ is 5.

Q61. Answer: (c) A

• Rs. 2.5 lakhs was the Personal Income Tax exemption limit for male individuals below 60 years of age & HUF (FY2015-16).

• There are broadly three categories of individual taxpayers: Individuals below 60 years old, resident senior citizens (60 years to 80 years), and Resident super senior citizens (above 80 years).

• The Government announces new tax slabs in the yearly budget. Every year, some modifications are done in the tax slabs.

• This year (for the budget 2020-2021), the taxpayer has the option to either opt for the new tax regime or continue with the old one as per the convenience.

• There is an option for individuals and HUF (Hindu Undivided Family) to pay taxes at lower rates without claiming deductions

YourMockTest.com — Free Study Material

under various sections.

• The new tax regime is applicable to all age groups and does not differentiate between the categories mentioned in point 2 above.

• However, there is still an exemption of Rs. 2.5 lakhs for all age groups in the current budget year.

Q62. Answer: (b) D

• Boron is used to controlling the fission reaction rate in a nuclear reactor as it absorbs neutron without itself getting into fissioning.

• In a nuclear fission reaction, an atom splits and release energy and a chain of reaction takes place in which the atom keeps on splitting and keeps on releasing energy.

• However, to control the enormous amount of energy, the splitting/fissioning needs to be controlled.

• Control rods are inserted into the core of the reactor and it helps in reducing the rate of reaction by absorbing neutrons and not letting the release of energy multiply.

• The control rods are made up of highly neutron-absorbing material. Isotopes of Boron and Cadmium are very efficient in absorbing neutrons and controlling the reaction.

• However, Aluminium is seldom used in control rods.

• Heavy Water and Graphite are used as a moderator to slow down the neutrons.

Additional Information

• Nuclear reactor:

• The nuclear reactor is an arrangement, in which a controlled nuclear fission reaction takes place.

• The first nuclear reactor was established at Chicago University under the supervision of Prof Enrico Fermi.

• Moderators-

• Heavy water (D2O) and graphite are used as Moderators.

• They used for slowing down fast neutrons.

• Core-

• The core of the reactor is the site of nuclear fission.

• It contains fuel.

• Reflector-

• The core is surrounded by a reflector to reduce leakage.

• Coolant-

• Liquid sodium, helium, Liquid oxygen are used as a coolant.

• The coolant transfers heat produced during fission to a working fluid which in turn may produce steam.

• The steam drives turbines and generates electricity.

• Control rods-

• Cadmium, Boron rods are used as a moderator.

• They have a high absorption of the capacity of neutrons.

• Shield-

• The whole assembly is shielded with heavy steel or concrete to check harmful radiation from coming out.

Q63. Answer: (b) 18

First row,

$3 \times 4 + 3 = 15$

Second row,

$7 \times 5 + 3 = 38$

Similarly, third row

$3 \times 5 + 3 = 18$

Hence, the missing character is 18.

Q64. Answer: (c) B

Given:

Speed of boat = 4 km/hr

Let speed of stream be x km/hr

Upstream speed = (4 - x) km/hr

Downstream speed = (4 + x) km/hr

Let total distance be d km

Let time to cover distance downstream and upstream be 'a' h and '2a' h respectively,
Calculation:
According to the question
d/(4 + x) = a ---(1)
d/(4 – x) = 2a ---((2)
Divide equation (2) by equation (1)
(4 + x)/(4 – x) = 2
=> 4 + x = 8 – 2x
=> 3x = 4
=> x = 4/3
=> x = 1.3 km/hr
The speed of the stream be 1.3 km/hr.

Q65. Answer: (c) 16

First column,
11^2 – 1^2 = 121 – 1 = 120
Second column,
7^2 – 2^2 = 49 – 4 = 45
In the same way third column
5^2 – 3^2 = 25 – 9 = 16
Hence, the missing character is 16.

Q66. Answer: (b) Only II conclusion follows

From the given statements we draw the following least possible Venn diagram.
I. Some mats are pencils.. – False (it is possible but not definite)
II. Some brooms are mats – It's true
Hence, Only II conclusion follows

Q67. Answer: (d) Only one worker in the industry has exactly four children.

The given statement is an industry worker has four children. No one else in the industry has four children.
Hence, we can conclude that only one worker in the industry has exactly four children.

Q68. Answer: (a) D

As we know,
The smallest two-digit prime number is 11 and the largest two-digit prime number is 97, then
Difference of their square = $97^2 – 11^2 = 9409 – 121 = 9288$
or, $(97 + 11) (97 - 11) = 9288$ [Because $a^2 - b^2 = (a + b) (a - b)$]

Q69. Answer: (c) D

Given:
Average weight of 30 students = 25 kg
Calculation:
Sum of weight of 30 students = 30 × 25 = 750
Let the weight of teacher be x
New average weight of 31 (30 students and 1 teacher) = 27
=> (750 + x)/31 = 27
=> 750 + x = 837
=> x = 837 - 750 = 87
Therefore Weight of teacher = 837 – 750 = 87

Q70. Answer: (d) D

- The huge storm known as the Great red spot is associated with Jupiter.
- This spot is twice as wide as the Earth and it circles the Southern Hemisphere of Jupiter.
- The speed of wind on the edges 270-425 mph. However, winds are calm in the center of the storm.

YourMockTest.com — Free Study Material

• It was first observed in 1831 by amateur astronomer Samuel Heinrich Schwabe.

• Please note that Jupiter is the largest planet in our solar system.

• The increasing order of distance of planets from the Sun:-Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. Pluto comes after Neptune but it is considered a dwarf planet.

Q71. Answer: (b) Tina

1) Rashmi is 4^(th) to the right of Priya. Priya is next to the left of Veera.

Tina is not between Neha and Sonali but some other one. Therefore, Rashmi sits between Neha and Sonali. Tina sits immediate right of Veera.

Hence, Tina sits just right to Veera.

Q72. Answer: (d) To the immediate right of Veera

1) Rashmi is 4^(th) to the right of Priya. Priya is next to the left of Veera.

Tina is not between Neha and Sonali but some other one. Therefore, Rashmi sits between Neha and Sonali. Tina sits immediate right of Veera.

Hence, Tina is to the immediate right of Veera.

Q73. Answer: (c) Veera & Tina

1) Rashmi is 4^(th) to the right of Priya. Priya is next to the left of Veera.

Tina is not between Neha and Sonali but some other one. Therefore, Rashmi sits between Neha and Sonali. Tina sits immediate right of Veera.

Hence, among the given options Veera and Tina will sit together

Q74. Answer: (d) Neither I nor II follows

From the given statements we draw the following least possible Venn diagram.

I. All the doctors are handsome – It's possible but not definite. Hence, it is false.

II. All the kings are doctors – It's possible but not definite. Hence, it is false.

Hence, neither I nor II follows

Q75. Answer: (a) A

• Winner of 2015 "United Nations Champions of the Earth" award in the category Policy Leadership was Sheikh Hasina.

• Champions of the Earth awards were established by United Nations Environment Programme in 2005.

• The awards are organized to recognize outstanding environmental leaders.

• UNEP coordinates the environmental activities of the United Nations and assists countries in implementing environmentally sound policies and practices.

• United Nations Champions of the Earth award 2016 in the category Policy Leadership - Paul Kagame (President of Rwanda).

• United Nations Champions of the Earth award 2017 in the category Policy Leadership - Michelle Bachelet (Former President of Chile).

• United Nations Champions of the Earth award 2018 in the category Policy Leadership - Narendra Modi (Prime Minister of India) and Emmanuel Macron (President of France).

• United Nations Champions of the Earth award 2019 in the category Policy Leadership - The nation of Costa Rica.

Q76. Answer: (b) B

Given:

Mukesh can file a return in 5 hours and Sachin in 4 hours alone. All three together can do it in 2 hours.

Calculation:

Total work = 20 unit [LCM of 5, 4 and 2]

All three together can do in 1 hour (20/2) = 10 unit work

Mukesh can do in 1 hour (20/5) = 4 unit work

Sachin can do in 1 hour (20/4) = 5 unit work

Manish can do in 1 hour = (10 – 5 – 4) = 1 unit work

Manish alone fill the return in = 20/1 = 20 hrs

Therefore In 20 hour Manish will do the work.

YourMockTest.com – Free Study Material

Q77. Answer: (c) A

• K.V. Kamath was appointed as the Chief of New Development Bank of BRICS country.

• He has also served as the chairman of Infosys Ltd. and was non-executive chairman of ICICI Bank in the past.

• BRICS - Brazil, Russia, India, China, and South Africa.

• It was founded as BRIC in 2006 and later became BRICS when South Africa joined in 2010. The BRICS forum encourages commercial, political, and cultural cooperation between the BRICS members. Bilateral relations among member nations are conducted primarily on the basis of non-interference, equality, and mutual benefit.

• Nandan Nilekani co-founded Infosys and currently is its non-executive chairman since August 2017.

• Azim Premji is the chairman of Wipro Limited.

• Chanda Kochhar is the former MD and CEO of ICICI Bank.

Q78. Answer: (a) C

• Isoelectronic are atoms/molecules/ions containing the same number of electrons.

• It means "equal electric" or "equal charge". They also display similar chemical properties. For instance- He, Li^+ has electronic configuration- $1s^2$.

• Isotones - Atoms/molecules/ions have the same number of neutrons but have different number of protons. For instance, boron-12 and carbon-13 both contain seven neutrons.

• Isotopes - Atoms/molecules/ions have the same number of protons but have different number of neutrons. For instance, Carbon 12 and Carbon 14 are both isotopes of carbon.

• Valence Isoelectronic - Atoms/molecules/ions have the same number of valence electrons.

Q79. Answer: (b) A

• Analog computer systems do not require any storage device.

• It is used to process analog data. It stores data in a continuous form of physical quantities.

• It was widely used in industrial and scientific applications like control systems and aircraft, etc. But it required special personnel to handle it and was very complex.

• The digital computer system performs various computational tasks. The 10 decimal digits (0 to 1) provide 10 discrete values.

• However, in practice, digital computers function more reliably if only two states are used and are said to be binary.

• Hybrid computers exhibit features of analog computers and digital computers. The analog unit serves as a solver of differential equations and other mathematically complex equations and the digital component serves to provide logical and numerical operations. It has digital memory.

• Third generation computer - It was from 1965-1971. It used Integrated Circuits and replaced bulky transistors. It was more efficient, smaller, and cheaper.

Q80. Answer: (b) C

• Fertilisation of sperm with the ovum takes place in Fallopian Tube.

• An egg cell/ovum is released from the ovary and it travels into a fallopian tube. It stays there until a single sperm fertilizes it.

• The ejaculated sperm also travels up to Fallopian Tube. It can live up to 48-72 hours.

• It takes about 24 hours for a sperm cell to fertilize an egg. At the time of fertilization, it is decided whether it would be a girl of a boy.

• The fertilized egg starts dividing into many cells and leaves the fallopian tube. It then enters the uterus 3 to 4 days after fertilization.

• The fertilized egg attaches to the lining of the uterus called the endometrium.

• After the egg attaches to the uterus, some cells become the placenta while others become the embryo.

• The cervix is located at the lowermost portion of the uterus and connects the vagina and uterus.

Q81. Answer: (d) EKLPRE

Similarly,

Hence, KEPLER is coded as EKLPRE.

Q82. Answer: (d) Movies promotes a feeling of helpless vulnerability in viewers.

Given statement is, Movies convince viewers that the likelihood of their becoming the victim of a violent crime is extremely high; at the same time by their very nature, movies persuade viewers to passively accept whatever happens to them.

It is given in the statement that movies persuade viewers to passively accept whatever happens to them. So, we can conclude that movies promote a feeling of helpless vulnerability in viewers.

Q83. Answer: (d) A

• South West Monsoon generates in the Arabian Sea.

• The period of South West Monsoon is from June to September.

• This monsoon starts setting up in May end over the extreme southwestern tip of the peninsula. It primarily happens due to low pressure on the landmass of India and high pressure of sea due to differential heating and cooling.

• The Inter-Tropical Convergence Zone also gets shifted over the Ganga plain. The Tibetan plateau gets intensely heated during summer creating low pressure.

• Then, the monsoon progresses to the low-pressure area in stages and covers India by the end of July.

• After covering the maximum land, it starts to retrieve by September from the extreme end of the northeast and goes towards the south.

Q84. Answer: (d) C

Sodium is the most electropositive and Chlorine is the most electronegative element of the third period of the modern periodic table.

• There are seven periods in the periodic table.

• There are eight elements in the third period-sodium, magnesium, aluminum, silicon, phosphorus, sulfur, chlorine, and argon.

• Electronegativity is a measure of the tendency of an atom to attract a bonding pair of electrons.

• Electropositivity is the measure of the ability of elements to donate electrons to form positive ions.

• Most atoms want to become stable either by losing or accepting electrons.

• Electronegativity increases from left to right across a period of elements.

• If the valence shell of an atom is less than half full, it would require less energy to lose an electron than to gain an electron.

• Similarly, if the valence shell is more than half full, it is easier to gain an electron into the valence shell than to donate other electrons in the valence shell.

Q85. Answer: (b) C

If 22, x, 88 are in a continued proportion, then

22 : x : : x : 88

=> 22/x = x/88

=> $x^2 = 22 \times 88$

=> $x = \sqrt{(11 \times 2 \times 11 \times 8)} = \sqrt{(11 \times 11 \times 4 \times 4)}$

=> $x = 11 \times 4$

=> $x = 44$

Q86. Answer: (a) Rajat

Hence, Rajat is the uncle of Jay.

Q87. Answer: (d) S is the father of Q.

1) Q is the brother of P – It is true.

2) Q is the son of S – it is true.

3) P is the brother of R – it is true.

4) S is the father of Q – S is either father or mother of Q. Hence, it is not true.

Q88. Answer: (d) 7

The circle stands for unemployed,

The smaller rectangle stands for lazy,

The triangle stands for urban and

The larger rectangle stands for foolish.

The number of non-urban, unemployed people – 9, 8, 7

Hence, the number of non-urban, unemployed people who are neither foolish nor lazy are – 7

Q89. Answer: (b) 9

The circle stands for unemployed,

The smaller rectangle stands for lazy,

The triangle stands for urban and

The larger rectangle stands for foolish.

The number of non-urban, unemployed people – 9, 8, 7

Hence, the number of non-urban, unemployed, lazy and foolish people are - 9.

Q90. Answer: (c) 1

The circle stands for unemployed,

The smaller rectangle stands for lazy,

The triangle stands for urban and

The larger rectangle stands for foolish.

Hence, The number of Unemployed, lazy, urban and foolish people are - 1

Q91. Answer: (d) B

• Majlis is an Arabic and Persian term. It means "council". It is primarily used to describe special gatherings among common interest groups, generally, administrative, social or religious in countries with cultural connections to Islamic countries.

Country	Capital	Parliament	Currency	President
Pakistan	Islamabad	Majilis-e-Shoora	Pakistani rupee	Arif Alvi
Israel	Jerusalem	Majlis	Israeli Shekel	Reuven Rivlin
Latvia	Riga	Saeima	Euro	Egils Levits
Bangladesh	Dhaka	Jatia Parliament	Taka	Abdul Hamid

Q92. Answer: (b) C

Maharashtra has the largest number of cotton mills.

• It produces 29.78 percent of the total cotton production of India. It is also called as ‘Cottonpolis of India’.

• India is the world’s largest producer of cotton. The states of Gujarat, Maharashtra, Andhra Pradesh, Haryana, Punjab, Madhya Pradesh, Rajasthan, Karnataka, and Tamil Nadu are the major cotton-producing areas in India.

• Nearly two - thirds of cotton production in India comes from the states of Maharashtra, Gujarat, Andhra Pradesh, and Telangana - collectively known as the Cotton Basket of India.

• The United States Department of Agriculture (USDA) pegs India's cotton production at 29 million bales in the 2019-20.

Q93. Answer: (c) B

Perimeter of the square = 100 m

Let all side equal (for maximum area) = 100/4 = 25 m

length = breadth = 25 m

Area of square = length × breadth

Area of square = 25 × 25 = 625 m²

Q94. Answer: (d) C

On the basis of Memory size & performance, MainFrame is known as "Big iron".

• A mainframe computer is used for large-scale computing purposes that require greater availability and security.

• They are mainly used for bulk data processing such as enterprise resource planning, industry, and consumer statistics, etc.

• Micro Computers are considered the smallest computers.

• Personal computers fall under this category.

• They are physically small to handle and serve the purpose of small data processing.

• Minicomputers are bigger than microcomputers.

• They can process fast than microcomputers.

• They are used as gateways between mainframe networks and main servers for local area networks of microcomputers.

• Supercomputer has the highest level of performance.

• They can do parallel processing and can perform multiple tasks.

• These are used for scientific and engineering applications that must handle very large databases or do a great amount of computation.

Q95. Answer: (d) C

90% of A = 30% of B

=> A × 90/100 = B × 30/100

YourMockTest.com – Free Study Material

=> A : B = 1 : 3
Let A = 1 and B = 3
B = x% of A
=> 3 = x% of 1
=> 1 × x/100 = 3
=> x = 300

Q96. Answer: (c) D

3/4 = 3/4 × 30/30 = 90/120
4/5 = 4/5 × 24/24 = 96/120
5/6 = 5/6 × 20/20 = 100/120
7/8 = 7/8 × 15/15 = 105/120
The largest fraction is 105/120 (7/8).

Q97. Answer: (d) B

Use of trigonometric ratios
sin 60
=> √3/2

Q98. Answer: (c) D

Somatostatin is not secreted by the Pituitary gland.
• The pituitary gland is the 'master gland' of the human body.
• Its primary function is to secrete important hormones into your bloodstream and regulates vital body functions.
• Some of the important hormones are - Growth hormone, Thyroid-stimulating hormone, Vasopressin, Prolactin, Oxytocin, etc.
• Somatostatin is a hormone and it is produced by tissues of nervous and digestive systems.
• It regulates physiological functions and inhibits the secretion of other hormones.
• Thyroid-stimulating hormone is produced by Anterior lobe of the pituitary gland.
• It activates thyroid to release thyroid hormones crucial for metabolism.
• Prolactin hormone is produced by Anterior lobe of the pituitary gland.
• It helps women who are breastfeeding produce milk.
• Vasopressin is produced by the posterior lobe of the pituitary gland.
• It helps our body to conserve water and prevent dehydration.

Q99. Answer: (d) B

Given:
Total wages of A, B and C = Rs.784
Part of the work completed by A and B = (23/28) × Total work done
Formula Used:
Work = Time × Efficiency ----(i)
Calculation:
Let the total work done be x units
So, part of the work completed by A and B = (23/28)x
Remaining work to be completed by C alone = x – (23/28)x = (5/28)x
Now, from equation (i),
Work prop. to Efficiency ----(ii)
Hence, Work prop. to Wages ----(iii)
On combining the above two equations with the work to be completed by C alone, we get:
Wages of C = (5/28) × 784 = 140
Therefore Wages of C is Rs.140
Alternate Method
Let the total work be = √784 = 28 unit
Work done by A and B = 23/28 × 28 = 23
Remaining work done by C = 28 – 23 = 5

YourMockTest.com — Free Study Material

28 unit = 784

=> 1 unit = 784/28

=> 1 unit = 28

=> 5 unit = 28 × 5 = 140

Therefore Wages of C is Rs.140

Q100. Answer: (b) A

=> 200 × 20 × 2 × 0.2 × 0.02 × 0.002

=> 0.064

More previous year papers and mock tests: **www.yourmocktest.com/pyq**

YourMockTest.com — Free Study Material