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Your Personal Exams Guide

- NDA
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RRB Group D 2018 Previous Year Paper (29-Oct-2018) (Shift 2)

Total Time: 1 Hour : 30 Minute **Total Marks:** 100

Instructions

Sl No.	Section Name	No. of Question	Maximum Marks	Negative Marks	Positive Marks
1	CBT	100	100	0.33	1

1.) A total of 90 minutes is allotted for the examination.

2.) The server will set your clock for you. In the top right corner of your screen, a countdown timer will display the remaining time for you to complete the exam. Once the timer reaches zero, the examination will end automatically. The paper need not be submitted when your timer reaches zero.

3.) There will, however, be sectional timing for this exam. You will have to complete each section within the specified time limit. Before moving on to the next section, you must complete the current one within the time limits.

CBT

1. The density of silver is 10.8×10^3 kg/m^3. and the density of water is 10^3kg/m^3?. What is the relative density of Ag? **(+1, -0.33)**

   a. 0.108

   b. 1.08

   c. 108

   d. 10.8

---

2. Srinivas works and earns Rs. 14,500 per month, out of which he saves only 20% and spends the remaining amount on other deeds. Find the amount spent. **(+1, -0.33)**

   a. Rs. 11,500

   b. Rs. 11,400

   c. Rs. 211,000

   d. Rs. 11,600

---

3. Select the term that relates to the third term in the same way as the second term relates to the first term. **(+1, -0.33)**

   Blogger: Writer :: Illustrator : ?

   a. Artist

   b. Singer

   c. Doctor

d. Cook

---

4. The length and breadth of a rectangular field is in the of ratio 3 : 2 If the area of the field is 1,350 m^2, then the cost of fencing it at Rs. 30/m will be: **(+1, -0.33)**

a. Rs. 5,680

b. Rs. 4,500

c. Rs. 4,000

d. Rs. 5,240

---

5. Write four more rational numbers in the following pattern **(+1, -0.33)**

$\frac{1}{-6}, \frac{2}{-12}, \frac{3}{-18}, \frac{4}{-24}, \ldots\ldots\ldots,$

a. $\frac{5}{6}, \frac{7}{8}, \frac{9}{10}, \frac{11}{12}$

b. $\frac{5}{30}, \frac{6}{36}, \frac{7}{42}, \frac{8}{48}$

c. $\frac{5}{-6}, \frac{6}{-12}, \frac{7}{-18}, \frac{8}{-24}$

d. $\frac{5}{-30}, \frac{6}{-36}, \frac{7}{-42}, \frac{8}{-48}$

---

6. Who was the author of the trilogy "The Immortals of Meluha", "The Secret of the Nagas", and "The Oath of the Vayuputras"? **(+1, -0.33)**

a. Amish Tripathi

b. Anannd Neelakantan

c. Kavita Kane

d. Devdutt Pattanaik

7. _____ is the first state of India to receive rainfall by the southwest monsoon. **(+1, -0.33)**

a. Kerala

b. Goa

c. Maharashtra

d. Gujarat

8. Express in meters the sum of 0.5035 km, 332.9 cm and 1771 mm: **(+1, -0.33)**

a. 500

b. 510

c. 508.6

d. 58.6

9. Find the next figure for the given series: **(+1, -0.33)**

Problem figures:

Answer figures:

a. C

b. A

c. B

d. D

---

10. 3.8/1.25, written as a pure decimal, will be: **(+1, -0.33)**

a. 3.14

b. 3.04

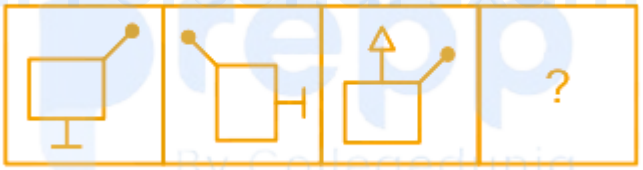
c. 3.06

d. 3.08

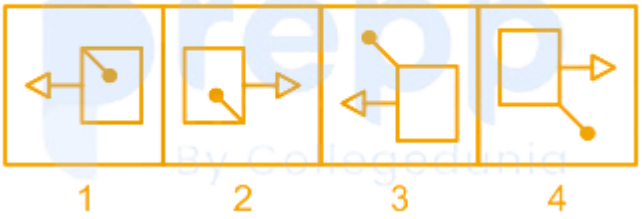
---

11. From the option figures, select the one that is related to question figure c in the same way as question figure b is related to question figure a. **(+1, -0.33)**

Question Figures:



Option Figures:



a. 2

b. 1

c. 3

d. 4

---

12. Read the given statement(s) and conclusions carefully and select which of the conclusions logically follow(s) from the statement(s). **(+1, -0.33)**

Statement:

Child labour is a punishable crime

Conclusions:

I. Poverty of parents and their inability to send their children to school is the reason behind child labour

II. Government has issued a ban on child labour

a. Only conclusion II follows

b. Only conclusion I follows

c. Both the conclusions follow

d. No conclusion follows

---

13. Read the given statement(s) and conclusions carefully and select which of the conclusions logically follow(s) from the statement(s). **(+1, -0.33)**

Is China spending on defence is justified?

Argument:

1. Yes, safety of the country is top priority

2. No, as peace in region is established hence money should be spend on development.

a. Only argument 1 is strong

b. Neither argument 1 nor 2 is strong

c. Only argument 2 is strong

d. Both argument 1 and 2 is strong

---

14. Which of these is the biggest tax reform made in India since independence? **(+1, -0.33)**

a. Goods and Services Tax

b. Excise duty

c. Customs duty

d. Land revenue

---

15. How much work is done in moving a charge of 4 C across two points having a potential difference of 12 V? **(+1, -0.33)**

a. 48 J

b. 3 J

c. 40 J

d. 12 J

---

16. The chemical formula of Ammonium phosphate is _____. **(+1, -0.33)**

a. $(NH_4)_3PO_4$

b. $(NH_4)_2PO_4$

c. $(NH_4)_2PO_2$

d. NH_4PO_4

---

17. The carpel contains, **(+1, -0.33)**

a. Pollen grains

b. Sepals

c. Petals

d. Ovules

---

18. Xylem is a/an _____ tissue. **(+1, -0.33)**

a. simple permanent

b. complex permanent

c. epithelial

d. connective

---

19. What is the straight tube, about 40 cm long, that carries sperms to the seminal vesicles, called? **(+1, -0.33)**

a. Urethra

b. Penis

c. Vas deferens

d. Scrotum

---

20. The pressure variations inside the inner ear are turned into electrical signals by the: **(+1, -0.33)**

a. Cochlea

b. Hammer

c. Stirrup

d. Anivl

---

21. A flight covering a distance of 1200 km could reduce the travel time by 30 minutes, due to an additive tailwind that increases the average speed by 120 km/hr. What was the duration of the flight in hours? **(+1, -0.33)**

a. 2.2 hours

b. 1.9 hours

c. 1.8 hours

d. 2 hours 30 min

---

22. A clock shows 2 am now. Find the total rotation of the minute hand, in degrees, of the clock when it will show 9 pm on the same night? **(+1, -0.33)**

a. 8600°

b. 6840°

c. 6470°

d. 5930°

---

23. Simplify the following expression: **(+1, -0.33)**

$\left(\frac{3}{11} \times \frac{33}{6}\right) - \left(\frac{9}{4} \times \frac{12}{3}\right) + \left(\frac{5}{11} \times \frac{22}{10}\right)$

a. (-9)/2

b. (-13)/2

c. 13/2

d. 9/2

---

24. What is the total earning after 2 years from Rs. 18,750 on variable compound interest if the rate of interest for the first year is 4% and for the second, it is 8%? **(+1, -0.33)**

a. Rs. 1,740

b. Rs. 1,760

c. Rs. 1,670

d. Rs. 2,310

---

25. _____ is a purple-coloured solid halogen. **(+1, -0.33)**

a. Bromine

b. Fluorine

c. Chlorine

d. Iodine

26. **(+1, -0.33)**

The mirror image of the above figure is

a. C

b. D

c. B

d. A

---

27. Find the energy possessed by an object of mass 10 kg when it is at a height of 8 m above the ground. Given g = 9.8 ms^{-2} **(+1, -0.33)**

a. 784 J

b. 588 J

c. 520 J

d. 528 J

28. Find the LCM of 96, 144 and 150. **(+1, -0.33)**

a. 1440

b. 3600

c. 7200

d. 2400

---

29. Which child artist won the 'Best child Artist' award for the film ' Noor Islam' at the 64th National Film Awards 2017? **(+1, -0.33)**

a. Munni

b. Matin Ray

c. Saj

d. Teena

---

30. Simplify the following expression **(+1, -0.33)**

$\left(\frac{3}{2} \times \frac{1}{6}\right) + \left(\frac{5}{3} \times \frac{7}{2}\right) - \left(\frac{13}{4} \times \frac{4}{3}\right) = ?$

a. 12/21

b. 21/12

c. 36/21

d. 41/12

---

31. Choose the best suitable Venn diagram for the following words: **(+1, -0.33)**

"Reptiles, Alligator, Tortoise"

a. 

b. 

c. 

d. 

---

32. The sum of the present ages of two persons is seven times that of the difference between their ages. After 5 years, the sum of their ages will become nine times that of the difference. What is the present age of the elder person? **(+1, -0.33)**

a. 24 years

b. 28 years

c. 14 years

d. 20 years

---

33. What is the upward force exerted by the water on the bottle containing it called? (+1, -0.33)

a. Tension

b. Buoyant Force

c. Thrust

d. Pressure

---

34. What happens to the volume (V) of the cuboid, if its length is doubled, height is doubled and breadth is kept same? (+1, -0.33)

a. V

b. V/2

c. 4V

d. 2V

---

35. Who among the following was elected as President of the Sahitya Akademi in 2018? (+1, -0.33)

a. Chandrashekar Kambar

b. U.R. Ananthamurthy

c. Pratibha Ray

d. Vinayak Krishna Gokak

---

36. After India's 29thstate, Telangana, was created, which of the following parties formed the first government in the state? **(+1, -0.33)**

a. Telangana Rashtra Samithi (TRS)

b. Telangana Rajya Samithi (TRS)

c. Telangana Loka Samithi (TLS)

d. Telangana Maha Samithi (TMS)

---

37. Consider the following question followed by the statements and decide which of the statements is sufficient to answer the question. **(+1, -0.33)**

Question:

8 trolleys in a supermarket are used to load and unload commodities. All of the trolleys have been filled with oil cans of two different sizes and shapes. How many cans are loaded in the trolleys in total?

Statements:

1. The shape of 8 cans are such that in one trolley only 2 can fit.

2. The rest of the trolleys are filled with 4 oil cans each.

a. Statement 1 alone is sufficient

b. Neither statement 1 nor 2 is sufficient

c. Statement 1 and 2 together are sufficient

d. Statement 2 alone is sufficient

---

38. A solution contains 42 g of common salt in 320 g of water. Calculate the concentration in terms of mass by mass percentage of the solution? **(+1, -0.33)**

a. 11.6 g

b. 12.6%

c. 11.6%

d. 10.36%

---

39. The general formula of alkynes is _____. **(+1, -0.33)**

a. C_nH_{3n-3}

b. C_nH_{2n-2}

c. C_nH_{2n+2}

d. C_nH_{2n}

---

40. 220 g of carbon dioxide contains _____ moles of co_2. **(+1, -0.33)**

a. 5

b. 6

c. 3

d. 4

---

41. A boy has 120 balls of which some are white and the remaining are black. If the percentage of white balls is 45%, find the number of black balls he **(+1, -0.33)**

has.

a. 56

b. 66

c. 64

d. 54

---

42. Prasid and Deep separately can do a certain work in 32 and 24 days respectively. They decided to do the work together and Niloy also joined them. If all of them together can complete the same work in 8 days, then how long does Niloy take to do the work alone? **(+1, -0.33)**

a. 92/5 days

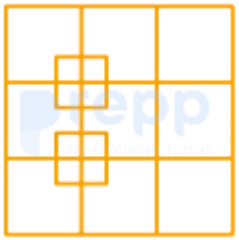
b. 96/5 days

c. 94/5 days

d. 89/5 days

---

43. Find the number of squares in the figure: **(+1, -0.33)**



a. 27

b. 25

c. 24

d. 26

---

44. A body is falling from a height of 200 m. After it has fallen 100m, the body will possess: **(+1, -0.33)**

a. Less kinetic energy and more potential energy.

b. Zero potential energy and half Kinetic energy

c. more kinetic energy and less potential energy.

d. Half potential energy and half kinetic energy.

---

45. The plant hormone that increases length of the stem is _____. **(+1, -0.33)**

a. Gibberellins

b. Cytokinins

c. Auxins

d. Insulin

---

46. The elements belonging to groups _____ are known as 'd' block elements. **(+1, -0.33)**

a. 3 to 12

b. 1 and 2

c. 13 to 18

d. 3 to 10

---

47. Find the odd one out. **(+1, -0.33)**

a. A

b. B

c. D

d. C

---

48. The usual average speed of a car on a particular stretch of road is 75 km/hr. On a particular day, the average speed was 12% less than the usual, as a result of which the time taken was 18 minutes more. How long is the stretch of road, in kilometres? **(+1, -0.33)**

a. 155

b. 176

c. 165

d. 150

---

49. Each question given below consists of a statement, followed by two arguments numbered I and II. You have to decide which of the arguments is 'strong' argument. **(+1, -0.33)**

Statement:

Should there be dress code for college students?

Arguments:

I. Yes, a dress code will bring unity and eliminate discrimination.

II. No, dress code takes away the opportunity to showcase students' style sense.

a. Neither I nor II is strong

b. Both I and II are strong

c. Only argument I is strong

d. Only argument II is strong

---

50. The number of books sold by a seller over a year is as follows. In which months did he sell more than the average number of books sold that year? **(+1, -0.33)**

Months	Number of books sold
January	2,000
February	1,500
March	2,500
April	3,000
May	2,000
June	1,000
July	1,500
August	2,000
September	5,000
October	2,000

November	150
December	6,000

a. September

b. June and March

c. January, May and December

d. March, April, September and December

---

51. Four options have been given below of which three are alike in some way and one is different. Choose the odd one out. **(+1, -0.33)**

a. IISC Bengaluru

b. Kotak Mahindra bank

c. IIT Hyderabad

d. NIT Calicut

---

52. Select the option figure that will complete the series of question figures. **(+1, -0.33)**

Question figures:

Option figures:

a. D

b. A

c. B

d. C

---

53. Avant points at a picture and say "she is the second daughter of my father's elder brother". Avant and the girl in the photograph are _____. (+1, -0.33)

a. Brothers

b. Friends

c. Siblings

d. Cousins

---

54. "Bharatiya Jnanpith" is an organization related to which of the following? (+1, -0.33)

a. General knowledge

b. Architecture

c. science

d. Literature

---

55. Identify the quiet Maritime strategic diplomacy that has emerged as the key theme of this year's Union Budget 2018-19? (+1, -0.33)

a. Big investment in island nations

b. Moderate investment in coastline infrastructure

c. Big investment in coastline guard and patrol

d. Moderate investment in Hitech Vessels

---

56. Find the next letter in the series: **(+1, -0.33)**

OV, QU, ST, US, _____?

a. OM

b. RH

c. WE

d. WR

---

57. Complete the following. **(+1, -0.33)**

1 kwh = _____?

a. 36×10^{-6} J

b. 3.6×10^{-6} J

c. 3.6×10^{6} J

d. 36×10^{6} J

---

58. Which Indian cricketer has inaugurated his global cricket academy at UAE recently? **(+1, -0.33)**

a. Sachin Tendulkar

b. MS Dhoni

c. Rahul Dravid

d. Virat Kohli

---

59. Read the given statement and choose which argument is strong. **(+1, -0.33)**

Statement:

Should the Indian government stop spending huge amounts of money on organising Commonwealth Games in the country?

Argument:

1. Yes, the money can be used for the development of poor people.

2. No, sport plays a significant role in exposing talent and helping athletes gain international exposure.

a. Only argument 2 is strong

b. Either argument 1 or 2 is strong

c. Only argument 1 is strong

d. Neither argument 1 nor 2 is strong

---

60. How many natural numbers less than 500, when divided by 35 and 49, will leave a remainder of 30 in each case? **(+1, -0.33)**

a. 4

b. 3

c. 1

d. 2

---

61. Find the odd one out of the given figures. **(+1, -0.33)**

a. D

b. C

c. B

d. A

---

62. The product of mass and velocity is called: **(+1, -0.33)**

a. Potential energy

b. Momentum

c. Force

d. Kinetic energy

---

63. Varun is playing caroms with Samarth sitting in standard caroms seating arrangement. If Varun is facing South-west direction. What is the facing direction of his opponent Samarth? **(+1, -0.33)**

a. North - West

b. South - east

c. North – East

d. South - West

---

64. The Sangam period is considered as the Golden Era of Tamil language as many classical Tamil _____ were written during this period. **(+1, -0.33)**

a. novels

b. prose

c. poems

d. epics

---

65. 'Wings India 2018' is a mega show in the civil Aviation and Aerospace area that showcases airlines, aircraft, and infrastructure. Which Indian city hosted this event in 2018? **(+1, -0.33)**

a. Bhubaneswar

b. Hyderabad

c. Bengaluru

d. Chennai

---

66. If + means ×, × means −, ÷ means + and − means ÷ then what is the value of 62 − 2 ÷ 8 + 15 × 4 + 6? **(+1, -0.33)**

a. 130

b. 127

c. 120

d. 128

---

67. Find the ODD one out. **(+1, -0.33)**

a. 

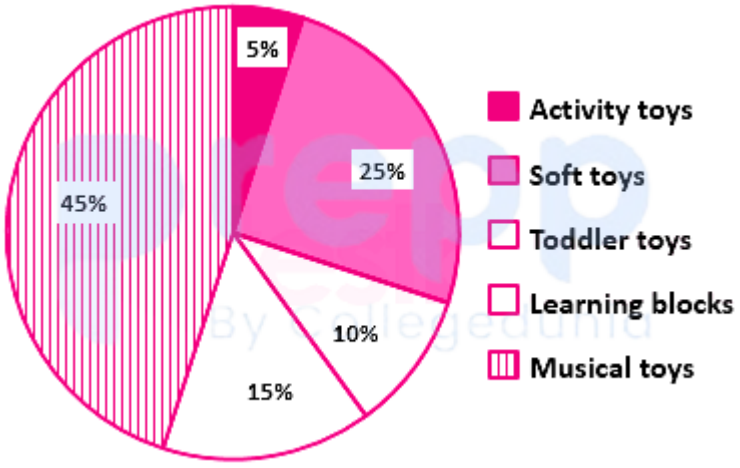
b. 

c. 

d. 

---

68. The following pie chart show information on the sales of a toy making company "XYZ" during 2017-18 financial year. **(+1, -0.33)**



The total revenue from the sale of all types of toys is Rs. 38,7200. What is the sales revenue earned on "Soft toys" by the company XYZ?

a. 9,68,00

b. 3,87,20

c. 7,74,40

d. 1,93,60

---

69. In a triangle, ∠C = 90° and ∠A = 60° then sin A/2 + cosecA = ? **(+1, -0.33)**

a. (√3 + 4)/2

b. (√3 + 4)/2√3

c. (√2 + 4)/3√3

d. (√3 + 4)/√3

---

70. The following diagram represents the survey results on two brands of chips conducted on a sample size of 50 customers. Based on the figure, how many liked none of the two brands of chips? **(+1, -0.33)**

a. 20

b. 0

c. 5

d. 25

---

71. What is the new reverse Repo rate announced by the Reserve Bank of India (RBI) as on 1st August 2018? **(+1, -0.33)**

a. 5.75

b. 6.75

c. 6.5

d. 6.25

---

72. If A greater than 0° and less than equal to 90° then find the minimum value of $(4\ \text{cosec}^2\ 2A + 9\ \sin^2\ 2A)$? **(+1, -0.33)**

a. 6

b. -12

c. 12

d. -18

73. Which sport is Kidambi Srikanth renowned for? **(+1, -0.33)**

a. Badminton

b. Tennis

c. Football

d. Chess

---

74. X attempts 100 questions and gets 340 marks. If for every correct answer is 4 marks and wrong answer is negative one mark, then the number of questions wrongly answered by Mr. X is: **(+1, -0.33)**

a. 14

b. 15

c. 12

d. 13

---

75. Find the next figure for the given series: **(+1, -0.33)**

Problem figures:

Answer figures:

a. D

b. C

c. A

d. B

---

76. If one root of the equation $(l - m)x^2 + 1 = 0$ is double the other and l is the real number, then which of the following is true? **(+1, -0.33)**

a. $m > 9/8$

b. $m > 8/9$

c. $m = 9/8$

d. $m \leq 9/8$

---

77. Find the least number which should be subtracted from 9999 so that the difference is exactly divisible by 16. **(+1, -0.33)**

a. 15

b. 12

c. 14

d. 13

---

78. Choose the bird which does not belong to the group. **(+1, -0.33)**

a. Peacock

b. Eagle

c. Ostrich

d. Hen

---

79. Shillong is the capital of _____. **(+1, -0.33)**

a. Tripura

b. Meghalaya

c. Nagaland

d. Assam

---

80. A sum of money invested for 4 years and 9 months at a rate of 8% simple interest per annum became Rs. 1,035 at the end of the period. What was the sum that was initially invested? **(+1, -0.33)**

a. Rs. 700

b. Rs. 675

c. Rs. 725

d. Rs. 750

---

81. Which of the following elements has the largest- size atoms? **(+1, -0.33)**

a. P

b. Cl

c. Ar

d. S

---

82. Momentum = _____ (+1, -0.33)

a. mass × Acceleration

b. Mass / Volume

c. Mass × Velocity

d. Mass × Density

---

83. Which of the following statements is/are true about the speed of sound in different media at 25 °C (+1, -0.33)

A. In steel, the speed of sound is 5960 m/s

B. In nickel, the speed of sound is 6240 km/s.

a. Only A is true

b. Neither A nor B is true

c. Both A and B are true

d. Only B is true

---

84. Which of the following Indian State Political parties is led by Ram Vilas Paswan? (+1, -0.33)

a. Rashtriya Lok Samta Party

b. Lok Janshakti Party

c. Rashtriya Lok Dal

d. Shiromani Akali Dal

---

85. The general reaction between a metal oxide and an acid can be written as: **(+1, -0.33)**

a. Metal oxide + acid □ salt + water

b. Metal oxide + acid □ salt + precipitate

c. Metal oxide + acid □ water + gas

d. Metal oxide + acid □ salt + gas

---

86. Find the value of $\frac{(0.22)^3-(0.11)^3}{0.0484+0.0242+0.0121}$ **(+1, -0.33)**

a. 9.0

b. 1.2

c. 2.0

d. 0.11

---

87. $4x^2 + kx + 5$ is divisible by x - 1. The expression is also divisible by **(+1, -0.33)**

a. 4x – 5

b. x – 5

c. 4x + 5

d. 4x – 1

---

88. Who won the 'Outstanding Parliamentarian' Award for 2017 given by the Indian Parliamentary Group (IPG)? **(+1, -0.33)**

a. Bhartruhari Mahtab

b. Arun Jaitley

c. Narendra Modi

d. Rahul Gandhi

---

89. The ratio of the ages of the father and the son ten years ago was 11:3. Ten years hence the ratio would be 21: 13. What are the present ages of the father and the son? **(+1, -0.33)**

a. 32, 16

b. 22, 14

c. 25, 15

d. 32,12

---

90. _____ has a very high melting and boiling points. **(+1, -0.33)**

a. Diamond

b. Fullerene

c. Graphite

d. Charcoal

91. In a group of 1300 students, every student reads 5 subjects and every subject is read by 65 students. The number of subjects are: **(+1, -0.33)**

a. exactly 100

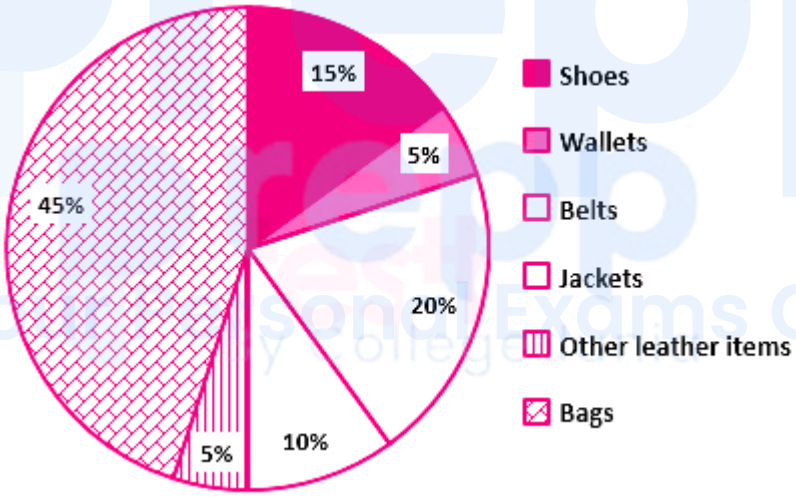
b. may be 250

c. at the most 70

d. at least 10

---

92. The following pie diagram shows the revenue of the company ABC, which manufactures the leather products. The total revenue of the company for the year 2015 was Rs. 36,28,000. **(+1, -0.33)**



How much revenue was made on the sales of wallets & belts?

a. Rs. 9,07,000

b. Rs. 1,81,400

c. Rs. 90,700

d. Rs. 1,814,000

93. Which company has appointed Mr Rangarajan Raghavan as its Manging Director? (+1, -0.33)

a. WIPRO

b. TCS

c. INFOSYS

d. HCL Infosystems Ltd.

94. 'Purna Swaraj' was announced in the Indian National Congress session of ------. (+1, -0.33)

a. Nagpur

b. Poona

c. Calcutta

d. Lahore

95. Who became the first visually impaired Indian runner to complete the historic Boston Marathon in 2017? (+1, -0.33)

a. Rinku Hooda

b. Sagar Baheti

c. Varun Bhati

d. Sharath Gayakwad

96. Which of the following ideals of the constitution of India were inspired from Russia? (+1, -0.33)

a. Amendment procedure

b. Fundamental Rights

c. Fundamental duties

d. Directive Principles

---

97. If in a certain code BRIM is written as AQHL, how would EDGE be written in that code? (+1, -0.33)

a. FDCD

b. CDCF

c. DCGH

d. DCFD

---

98. Which one of the following is NOT correct for Rhizoid? (+1, -0.33)

a. They are multi-cellular and composed of epithelial tissues

b. They are protuberances that extend from the lower epidermal cell of bryophytes.

c. They get attached with substratum with the help of rhizoid.

d. They are similar in structure and function to the root hairs of vascular land plants.

---

99. The plant part moves toward light, it is called _____. **(+1, -0.33)**

a. Positive phototropism

b. Negative tropism

c. Positive tropism

d. Negative phototropism

---

100. Read the given statement(s) and conclusions carefully and select which of the conclusions logically follow(s) from the given statement(s). **(+1, -0.33)**

Statements:

I. All gadgets are electronics.

II. All electronics are chips.

Conclusions:

1. All gadgets are chips.

2. Some chips are electronics.

a. Conclusion 1 alone follows.

b. Both 1 and 2 follows.

c. Conclusion 2 alone follows.

d. Neither 1 nor 2 follows.

Answers

1. **Answer: d**

Explanation:

The correct answer is option 4 i.e **10.8**

Silver:

Formula: **Ag**

Atomic number: **47**

- **Relative density:** It is defined as the ratio of the density of a substance to the density of water.
- It is also known as specific gravity.
- **Relative density = Density of substance / Density of water**
- Relative density= $10.8 \times 10^3 / 10^3$
- Hence Relative Density = 10.8

---

2. **Answer: d**

Explanation:

Srinivas woks and earns = Rs. 14,500

He saves = 20%

He spent = 100% – 20% = 80%

He spent = Rs. 14,500 × (80/100) = 11,600

---

3. **Answer: a**

Explanation:

Bloggers and writers deal with similar type of work of writing the blogs, articles, novels, etc.

Similarly,

Illustrator and artist deal with similar type of work of drawing the pictures for magazines, books and advertising.

Hence, 'Artist' is the correct answer.

---

4. Answer: b

Explanation:

Ratio of length and breadth of the triangle = 3x : 2x

As we know,

Area of rectangle = lb

$\Rightarrow 3x \times 2x = 1350$

$\Rightarrow 6x^2 = 1350$

$\Rightarrow x^2 = 1350/6$

$\Rightarrow x^2 = 225$

$\Rightarrow x = \sqrt{225} = 15$ m

Length of the rectangle = 3x = 3 × 15 = 45 m

Breadth of the rectangle = 2x = 2 × 15 = 30 m

Perimeter of the rectangle = 2 (l + b) = 2 (45 + 30) = 2 × 75 = 150 m

Cost of fencing 1 m = Rs. 30

Cost of fencing 150 m = 150 × 30 = Rs. 4,500

---

5. Answer: d

Explanation:

$\Rightarrow \frac{1}{-6}, \frac{2}{-12}, \frac{3}{-18}, \frac{4}{-24}, \ldots\ldots\ldots$

⇒ 1/(-6)

Similarly,

⇒ 2/(-12) = 1/(-6)

⇒ 3/(-18) = 1/(-6)

⇒ 4/(-24) = 1/(-6)

From option (4), follow the same pattern

$\Rightarrow \frac{5}{-30}, \frac{6}{-36}, \frac{7}{-42}, \frac{8}{-48}$

⇒ 5/(-30) = 1/(-6)

⇒ 6/(-36) = 1/(-6)

⇒ 7/(-42) = 1/(-6)

⇒ 8/(-48) = 1/(-6)

So correct option is (4).

---

6. Answer: a

Explanation:

Option 1is correct:

Author	Books
Amish Tripathi	Immortals of Meluha, The Secrets of the Nagas, The Oath of the Vayuputras, Ram: Scion of Ikshvaku, Sita: Warrior of Mithila, Raavana: Orphan of Aryavarta
Anand Neelakantan	The Rise of Sivagami, Asura: Tale of the Vanquished, Vanara
Kavita Kane	Lanka's Princess, Meneka's Choice, Sita's Sister, The Fisher Queen's Dynasty
Devdutt Pattanaik	Aranyaka, Yoga Mythology, I Am Divine So Are You, Devlok 3

---

7. **Answer: a**

Explanation:

The correct answer is option 1 i.e**Kerala**

- **Kerala**is the first state of India to receive rainfall by the southwest monsoon.
- Rainfall received from the southwest monsoons is seasonal, which occurs between June and September.

Kerala:

- **Capital:** Thiruvananthapuram
- **Governor:** Arif Mohammad Khan
- **CM:** Pinarayi Vijayan

Types of Monsoon	Duration
Southwest monsoon	June to September
Northeast monsoon	October- November

---

8. **Answer: c**

Explanation:

As we know,

1 km = 1000 m

1 m = 100 cm

1 cm = 10 mm

⇒ 0.5035 km = 0.5035 × 1000 = 503.5 m

⇒ 332.9 cm = 332.9 × (1/100) = 3.329 m

⇒ 1771 mm = 1772 × (1/1000) = 1.771 m

⇒ Sum of 503.5 + 3.329 + 1.771 = 508.6 m

---

9. **Answer: c**

Explanation:

According to the first 2 diagrams, the shaded circle is added into the empty circle.

Similarly,

In the next two figures, the shaded circle will be inserted into the empty triangle.

Hence, figure B is the correct answer.

---

10. **Answer: b**

Explanation:

⇒ 3.8/1.25

Multiply by 8/8

⇒ (3.8/1.25) × (8/8)

⇒ 30.4/10

⇒ 3.04

---

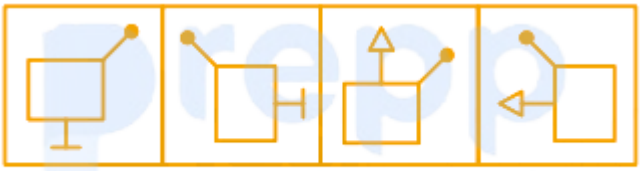
11. **Answer: c**

Explanation:

Relation between first and second figures:

The figure is moving in 90 degree anticlockwise direction.

Similar relation will be applicable for the next two figures.



Hence, figure 3 is the correct answer.

---

12. **Answer: a**

Explanation:

Statement:

Child labour is punishable

Conclusion:

I: Poverty of parents and their inability to send their children to school is the reason behind child labour: it not completely true because inability of education is not the reason behind the child labour. According to the right to free and compulsory Education Act is an Act of the parliament to provide free and compulsory education for children between the age of 6 to 14. Hence, conclusion one does not satisfy completely.

II. Government has issued a ban on child labour: According to Child Labour (Prohibition and Regulation) Act 1986. Article 24 of Indian constitution clearly assumes that No child below the fourteen years shall be employed to work in any factory or mine or employed in any hazardous employment.

Hence, only conclusion II follows.

---

13. **Answer: a**

Explanation:

Argument

1) Yes, safety of the country is top priority: the first priority of every country is safety. If country is secured than only development is possible.

Hence, argument 1 is strong.

---

14. **Answer: a**

Explanation:

Option 1is correct:

- Goods and Services Tax (GST) is an indirect tax levied on the supply of commodities and services.
- The GST was launched at midnight on **1 July 2017** by the President of India, Pranab Mukherjee, and the Prime Minister of India Narendra Modi.
- There are two types of GST – Central GST (CGST) and State GST (SGST).
- GST is established under the **101 st amendment of the constitution** .
- The Goods and Services Tax (GST) was first implemented in **France** .
- GST in India was made on the recommendation of the **Vijay Kelkar Committee** .
- GST has been implemented **under 279** of the India constitution.

---

15. Answer: a

Explanation:

The correct answer is option 1 i.e 48 J

Work: It is defined as the force required to move an object from its place in a direction.

- W = QV

Where W = work
Q = charge
V = Potential difference

- W = 4 C × 12 V
- **W = 48 J**

---

16. Answer: a

Explanation:

The correct answer is option 1 i.e $(NH4)_3PO4$

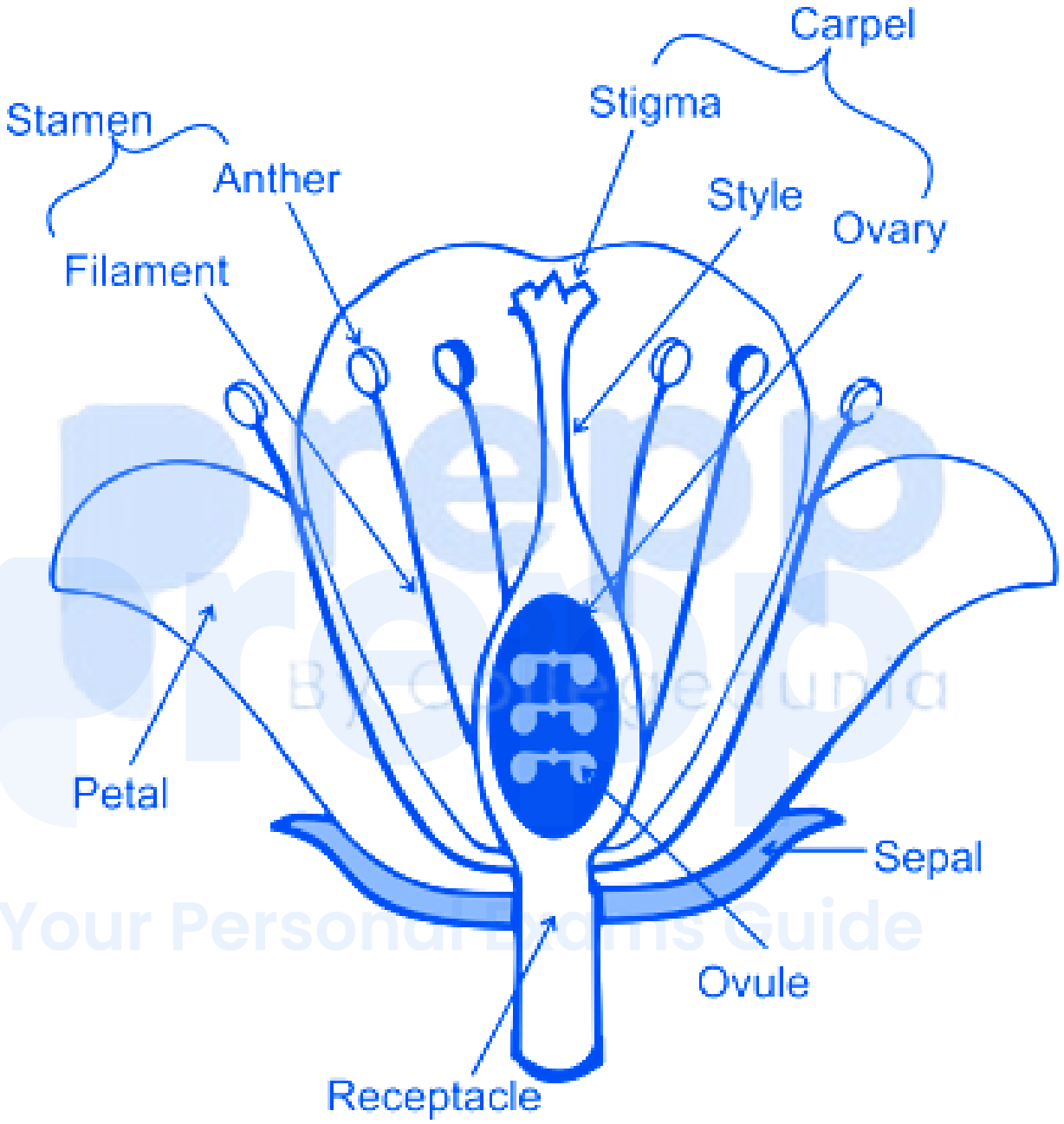
- The Chemical formula of Ammonium phosphate: $(NH_4)_3PO4$
- It is the salt of Ammonia and Phosphoric acid
- Other names of this salt are Triammonium phosphate, Diazanium hydrogen phosphate.
- All other options are wrong

---

17. **Answer: d**

Explanation:

- The carpels(female) and stamens(male) are surrounded by petals.
- Carpel- One of the leaflike, seed-bearing structures that constitute the innermost whorl of a flower.
  One or more carpels make up the pistil.
  Fertilization of an egg within a carpel by a pollen grain from another flower results in seed development within the carpel.
  Carpels, present in the centre of a flower, form the female reproductive part. It is surrounded by male reproductive structures called stamens.
- The petals are protected by sepals, which are green.
- The carpels are the female reproductive part of the flower. It is divided into three parts namely- ovary, style and stigma.
- The ovary contains ovules and the style acts as a passage for the pollen tubes carrying the male gametes.
- The stigma is the terminal part of the carpel which is receptive and it receives the pollen grains and provides nutrition for the growth and development of pollen tube which carries male gametes through style and reaches the ovules to fertilise an egg.



18. **Answer: b**

Explanation:

Option **2**is correct:

- Complex permanent tissue: The complex tissues are made of more than one type of cells and these work together as a unit.
- Xylem and phloem constitute the complex tissues in plants.
- **Xylem** is one of the important tissues of the vascular system of plants. The main activity of this tissue is to transport minerals and water from roots and carry them to other parts of the plants. It has two separate chambers tracheids and vessels for transporting minerals and water.
- **Phloem** is also important as the xylem tissues for the vascular system of plants. The main activity of this tissue is to transport nutrients and food from leaves to other growing parts of plants.

Difference between Phloem and Xylem:-

Characteristic	Xylem	Phloem
Conduction	Water and minerals from the root to body parts	Prepared Food from leaves to body parts
Strength	Provides mechanical strength	Do not provide mechanical strength
Elements live	Xylem parenchyma only	Sieve tubes, companion cell and phloem parenchyma
Conduction direction	Unidirectional	Bidirectional
Conducting channel	Tracheids	Sieve tubes

19. **Answer: c**

Explanation:

Option **3** is correct:

- The human male reproductive system consist of the following organs:

Urethra	• It is about 20 cm long tube that arises from the urinary bladder to carry urine. • It runs through the penis and opens to the outside through male genital pore. • The urethra carries urine from the bladder, as well as sperms from the vas deferens, through the penis.
Penis	• The penis is a long and thick muscular organ made up of mostly erectile tissue. • The tip of the penis consists of a soft and highly sensitive glans penis, which is covered by a loose, retractable fold of skin called foreskin.
Vas deferens	• This is a straight tube, about 40 cm long, which carries the sperms to the seminal vesicles.
Scrotum	• The scrotum is a pouch of skin that hangs between the legs. It is divided internally into right and left scrotal sacs by a muscular partition. • The scrotum acts as thermoregulation and provides an optimal temperature for the formation of sperms. • During summers, when the temperature rises, the scrotum becomes relaxed to lose heat.

20. **Answer: a**

Explanation:

The correct answer is option 1 i.e **Cochlea**

EAR:

- The ears perform two sensory functions one is hearing and other is maintenance of body balance.
- The ear can be divided into three major sections 1) **the outer ear 2)the middle ear and 3) the inner ear** .
- The fluid the filled inner ear is called the labyrinth, and the coiled portion of the labyrinth is called **cochlea**.
- The vibrations produced in the eardrum are transmitted through the ear ossicles and oval window to the fluid-filled inner ear.
- The inner ear also contains a complex system located above the cochlea called the vestibular apparatus.
- It is influenced by gravity and movements and helps us in maintaining the balance of the body and posture.

21. **Answer: d**

Explanation:

Total distance = 1200 km

As we know,

30 min = 1/2 hr

Let the speed of the flight be x km/hr

According to the question

⇒ 1200/x – 12000/(x + 120) = 1/2

⇒ 1200 [(x + 120 – x)/x (x + 120)] = 1/2

⇒ 1200 [120/(x^2 + 120x)] = 1/2

⇒ 1200 × 120 × 2 = x^2 + 120x

⇒ 288000 = x^2 + 120x

⇒ x^2 + 120x – 288000 = 0

⇒ x^2 + 600x – 480x – 288000 = 0

⇒ x (x + 600) – 480 (x + 600) = 0

⇒ (x + 600) (x – 480) = 0

Taking

⇒ (x – 480) = 0

⇒ x = 480 km/hr

Total distance = 1200 km

Speed = 480 km/hr

As we know,

Time = Distance/Speed

Time = 1200/480 = 2.5 hr or 2 hr 30 min

Shortcut Trick

Let increased speed be S_1 and reduced time be T_1

Then, distance = T_1 × S(S + S_1)/S_1

⇒ 1200 = $\frac{1}{2} \times \frac{S(S+120)}{120}$

⇒ S(S + 120) = 288000

⇒ S(S + 120) = 480 × 600

⇒ S = 480 km/h

⇒ Duration of the flight = 1200/480 = 2.5 h or 2 hr 30 min

∴ The correct answer is 2 hr 30 min.

---

22. Answer: b

Explanation:

No. of hours between 2 am and 2 pm in a day = 12 hours

No. of hours between 2 pm and 9 pm in a day = 7 hours.

Therefore, total no. of hours between 2 am and 9 pm of the same day = 12 + 7 = 19 hours.

Angle rotated by a minute hand in 1 hour = 360°

Therefore, total rotation in 19 hours = 19 × 360° = 6840°

Hence, the correct answer is 6840°.

---

23. Answer: b

Explanation:

$\left(\frac{3}{11} \times \frac{33}{6}\right) - \left(\frac{9}{4} \times \frac{12}{3}\right) + \left(\frac{5}{11} \times \frac{22}{10}\right)$

⇒ 3/2 − 9 + 1

⇒ (3 − 18 + 2)/2

⇒ (-13)/2

---

24. Answer: d

Explanation:

Given:

Principal(P) = 18,750, r_1 = 4% and r_2 = 8%

Formula used:

$A = P (1 + r_1/100) (1 + r_2/100)$

Amount(A), Principal(P), r_1 and r_2 = Rate

Calculation:

According to the question,

⇒ A = 18,750 × (104/100) × (108/100)

⇒ A = 21060

Compound Interest (CI) = Amount – Principal

⇒ CI = 21060 – 18750 = 2310

∴ The compound interest is 2310.

---

25. Answer: d

Explanation:

Option **4** is correct:

- **Halogen:** The Group 17 elements are known as the halogens.

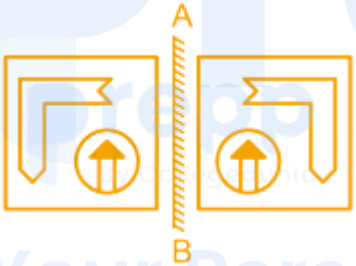
- They are reactive non-metals and are always found in compounds with other elements.
- Chlorine, bromine, and iodine are all halogens.
- The halogens become darker as you go down the group.

Fluorine	Pale yellow
Chlorine	Yellow-green
Bromine	Red-brown
Iodine	**Shiny purple/Blackish Purple**

---

26. Answer: a

Explanation:



Hence, the correct answer is figure 1.

---

27. Answer: a

Explanation:

The correct answer is option 1 i.e 784 J

- The energy possessed by an object of mass at height will be **Potential energy**.
- The energy possessed by a body on account of its position, shape and size is called Potential energy.

Examples	Types of**Energy**
Water stored in a dam	Potential energy
A raised hammer	Potential energy
A compressed spring	Potential energy

- Potential Energy = mgh
- Potential Energy = 10 kg × 9.8 ms^{-2} × 8 m
- Potential Energy = **784 J**

---

28. Answer: c

Explanation:

$96 = 32 \times 3 = 2^5 \times 3$

$144 = 16 \times 9 = 2^4 \times 3^2$

$150 = 25 \times 6 = 2 \times 3 \times 5^2$

$\Rightarrow$ LCM = $2^5 \times 3^2 \times 5^2 = 7200$

---

29. Answer: c

Explanation:

Option **3** is correct:

- Best Child Artist at 64th National Film Awards 2017:

Artist	Film
Adhish Praveen	Kunju Daivam
Saj	Noor Islam
Manohara	Railway Children

- Established in 1954.
- Directorate of film festivals comes under the Ministry of Information and Broadcasting
- The award is given for the best work in the film industry
- Two types of awards are awarded – Golden lotus award and Silver lotus award.
- Featured and Non- featured films certified by CBFC are eligible for this award.

---

30. Answer: b

Explanation:

Follow BODMAS rule to solve this question, as per the order given below:

Step-1: Parts of an equation enclosed in 'Brackets' must be solved first, and in the bracket,

Step-2: Any mathematical 'Of' or 'Exponent' must be solved next,

Step-3: Next, the parts of the equation that contain 'Division' and 'Multiplication' are calculated,

Step-4: Last but not least, the parts of the equation that contain 'Addition' and 'Subtraction' should be calculated.

$\Rightarrow \left(\frac{3}{2} \times \frac{1}{6}\right) + \left(\frac{5}{3} \times \frac{7}{2}\right) - \left(\frac{13}{4} \times \frac{4}{3}\right)$

⇒ 1/4 + 35/6 – 13/3

⇒ (3 + 70 – 52)/12

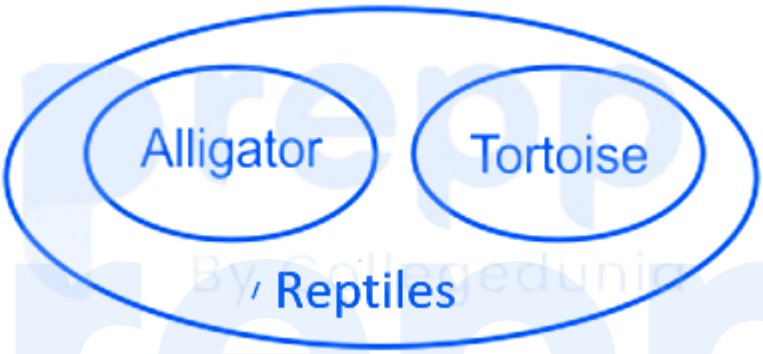
⇒ 21/12

---

31. Answer: c

Explanation:

Alligator and tortoise both are Reptiles



Hence, figure 3 is the correct answer.

*NOTE: This is a question from of official paper of RRC Group D, but we have made some improvements in this as the question asked was erroneous.

---

32. Answer: d

Explanation:

Let the present ages of two persons be x and y.

The sum of the present age of two person is seven times that of the difference between their ages.

$x + y = 7 (x - y)$

$x + y = 7x - 7y$

$6x = 8y$

$x/y = 8/6$

$x/y = 4/3$

$x = 4$

$y = 3$

let x and y be 4k and 3k (k is constant term)

After 5 years, the sum of their ages will become nine times that of the difference

$4k + 5 + 3k + 5 = 9\{(4k + 5) - (3k + 5)\}$

$7k + 10 = 36k + 45 - 27k - 45$

$2k = 10$

$K = 5$

$X = 4k = 4 \times 5 = 20$

$Y = 3k = 3 \times 5 = 15$

Hence, elder person is 20 years old.

Hence, the correct answer is option 4.

---

33. Answer: b

Explanation:

the correct answer is option 2 i.e**Buoyant Force**

Buoyant Force:

- It is the force that causes objects to float.

- It is the upward force applied by the fluid on the object or the body when an object is put in or submerged in the fluid.
- It is also known as the**buoyant force**.
- Buoyancy is the phenomenon due to Buoyant Force.
- The unit of the buoyant force is the **Newton (N)** .
- The buoyant force depends upon the density of the fluid.
- Buoyancy is defined as an upward force exerted by any fluid when an object is immersed in it.
- The pressure is more on the bottom of the object than the top of the object as the pressure increases with depth.
- These forces acting on the body are called the Buoyant force.
- Upward pressure exerted by the fluid depends upon the density of a fluid.
- The formulae for Buoyant force (f)=ρgv.
- Where ρ is the density of the fluid, g is the gravity, and v is the volume of fluid displaced.

Name of the force	Description
Tension	It is the pulling force that is applied axially by a rope, cable, etc.
Thrust force	It is the force that pushes or accelerate the object in one direction. It is based on Newton's third law of motion
Pressure	It is defined as the force applied perpendicular to the surface of an object per unit area

---

34. Answer: c

Explanation:

Let the initial length, breadth and height of the cuboid be l, b and h respectively.

∴ Volume of the cuboid (V) = lbh

After making changes, new length = 2l

New breadth = b

New height = 2h

∴ New volume of the cuboid = 2l × b × 2h = 4lbh

∴ New volume of the cuboid = 4V

---

35. Answer: a

Explanation:

The correct answer is option 1 i.e Chandrashekar Kambar

- Jnanpith recipient and Kannada literature Chandrashekhar Kambar (81) was elected as 44th President of the Sahitya Akademi.
- The Sahitya Akademi was started by the GOI on **12 March 1954**.
- Apart from 22 languages which are in listed in the constitution of India the Sahitya Akademi has recognized English and Rajasthani as languages in which the program can be implemented
- The Sahitya Akademi award amount is now Rs.100,000.
- The first Awards were given in 1955.

---

36. Answer: a

Explanation:

Option 1is correct: Telangana Rashtra Samithi (TRS)

- The Telangana state was inaugurated formally on **June 2 nd 2014** .

- In the General Elections held in April 2014,Telangana Rashtra Samithiemerged victorious by winning 63 of the 119 seats and formed the government. **Sri K Chandrashekar Rao** was sworn in as the First Chief Minister of Telangana.
- The State Bird - Palapitta (Indian Roller or Blue Jay).
- The State Animal - Jinka (Deer).
- The State Tree - Jammi Chettu (Prosopis Cineraria).
- The State Flower - Tangedu (Tanner's Cassia).

Capital	Hyderabad
District	33
Members of Parliament (MPs)	17
Members of Legislative Assembly (MLAs)	119

---

37. Answer: c

Explanation:

For statements 1

The shape of 8 cans are such that in one trolley only 2 can fit.

So 8 cans comes in = 8/2 = 4 trolleys

Rest trolleys = 8 – 4 = 4 trolleys

For statements 2.

The rest of the trolleys are filled with 4 oil cans each, then

Number of can which come in rest trolleys = 4 × 4 = 16 cans

Now, we can say both statements are sufficient to given the answer.

---

38. Answer: c

Explanation:

Quantity of salt = 42 g

Quantity of water = 320 g

Total quantity of solution = 320 + 42 = 362 g

Percentage of salt in the solution = (42/362) × 100 = 11.6%

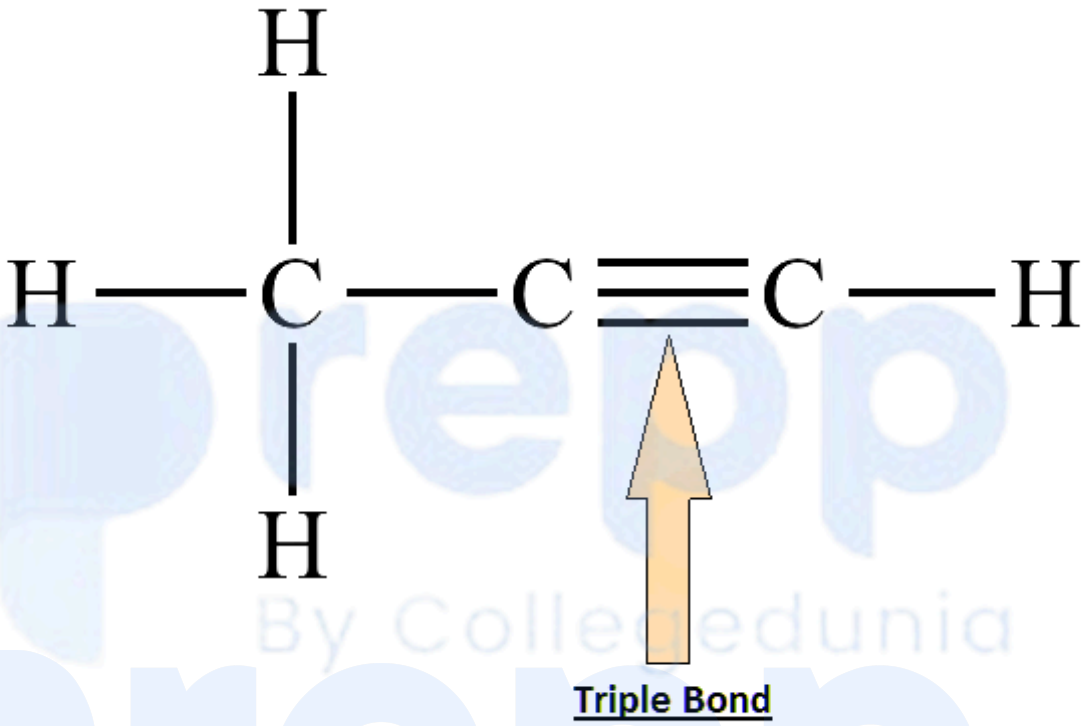
---

39. Answer: b

Explanation:

Option **2**is correct:

- **Alkynes** - The simplest alkyne—a hydrocarbon with carbon-to-carbon triple bond—has the molecular formulaC_2H_{2n-2} and is known by its common name—acetylene. Acetylene is used in oxyacetylene torches for **cutting and welding metals.**
- Eg.PropyneApplication:C 3H 4follows the general formula for a compound with n = 3 Hence C 3H 4 belongs to the alkyne family.



- Alkenes are unsaturated hydrocarbons that contain one or more double bonds . The general formula for **Alkenes** is **Cn H2n**. Example: Ethylene (C 2H 4).
- **Alkanes** are saturated hydrocarbons that contain a **single bond.**
- The General Formula for Alkanes is C nH 2n+2 .
- Example: Ethane (C 2H 6)

Alkane	C_nH_{2n+2}
Alkene	C_nH_{2n}

---

40. **Answer: a**

Explanation:

Option **1** is correct: **5 Moles.**

- One mole of Carbon dioxide contains One part Carbon, Two parts Oxygen.
- The Molar mass of carbon is 12 g and oxygen is 16 g.
- So 1 mole of CO_2 weighs :
  - (16*2)g = 32g for Oxygen, 12 g for carbon.
- The molar mass of CO_2 is 32 + 12 = 44 g.
- The number of moles of CO_2 in 220 g of CO_2 is 220/44 = **5 moles**.

---

41. Answer: b

Explanation:

Total number of balls = 120

Percentage of white balls = 45%

Percentage of black balls = 100% − 45% = 55%

Number of black balls = 120 × (55/100) = 66

---

42. Answer: b

Explanation:

Suppose Niloy alone can complete the whole work in x days

Prasid alone can complete the whole work in = 32 days

Deep alone can complete the whole work in = 24 days

According to the question

⇒ 8 × (1/x + 1/32 + 1/24) = 1

⇒ 1/x = 1/8 − 1/32 − 1/24

$\Rightarrow 1/x = (12 - 3 - 4)/96$

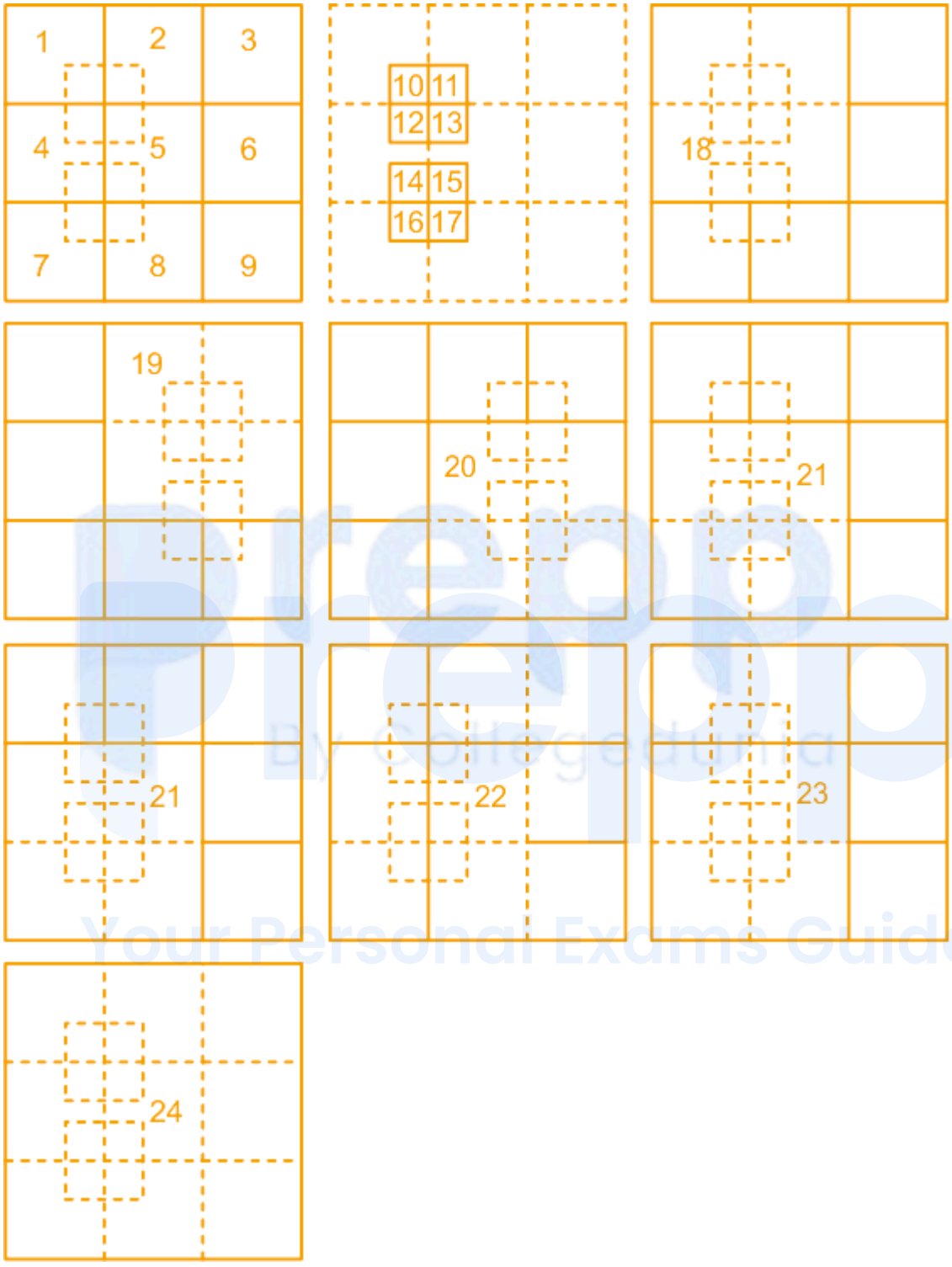
$\Rightarrow 1/x = 5/96$

$\Rightarrow x = 96/5$

---

43. Answer: c

Explanation:



Hence, total number of squares in the given figure are 24.

---

44. Answer: d

Explanation:

The correct answer is option 4 i.e**Half potential energy and half kinetic energy.**

- **Kinetic Energy:** The energy required to change the state of a body from rest to motion is called
- Kinetic Energy = 1/2 mv^2.
- **Potential energy:** It is the energy possessed by a body due to its change in position or shape.
- Potential Energy: Mgh
- **Law of conservation of energy:** According to the law, energy can only be transformed from one form to another, energy can neither be created nor destroyed. It can only be transformed from one form to another.
- The total energy before and after the transformation remains constant.
- potential energy + kinetic energy = constant
- Mgh + 1/2mv^2 = constant

---

45. Answer: c

Explanation:

Option **1** is correct i.e Auxins.

- Auxins, Gibberellins, and Cytokinins are grouped into plant growth promoters while abscisic acid and ethylene are grouped into plant growth inhibitors.
- Auxins are the main hormones responsible for cell elongation in phototropism and gravitropism by promoting cell growth.
- **Insulin**- Insulin is a hormone made in the pancreas, a gland located behind your stomach. It allows your body to use glucose for energy.

---

46. Answer: a

Explanation:

The correct answer is option 1 i.e **3 to 12**

- The **d-block** of the periodic table contains the elements of the **groups 3-12.**
- The d-block element is known as a transition element.
- There total of 4 blocks in the modern periodic table. They are as follows: s block, p block, d block, f block.
- There are 18 groups and 7 periods in the modern periodic table.
- Total elements are 118 out of which 92 are metals, 7 are metalloids, and 20 are non-metal.

---

47. Answer: c

Explanation:

Except figure D, in all figures the stars are arranged in the consecutive manner.

Whereas in figure D, stars are arranged opposite to each other.

Hence, figure D is odd one out.

---

48. Answer: c

Explanation:

Detailed Solution:

18 min = 3/10 hr

Speed = 75 km/hr

Speed after decreasing = 75 × (88/100) = 66 km/hr

Let the distance be D, then

According to the question:

⇒ D/66 – D/75 = 3/10

⇒ D [(75 – 66)/(75 × 66)] = 3/10

⇒ D = (3/10) × 75 × (66/9)

⇒ D = 165 km

⇒ 165 km

Short trick:

Speed ratio before and after decrement of speed = 75 : 66 = 25 : 22

As we know, Time is inversely proportional to speed, then

Time ratio before and after decrement of speed = 22 : 25

According to the question

⇒ 25 – 22 unit = 18 min

⇒ 3 unit = 18 min

⇒ 22 unit = 6 × 22 = 132 min

So, total time = 132/60 hr

As we know,

Distance = Time × speed

Distance = 132/60 × 75 = 165 km

---

49. Answer: c

Explanation:

Yes, a dress code will bring unity and eliminate discrimination. There will be no discrimination if all will wear the similar dress.

---

50. Answer: d

Explanation:

Total number of sold books over the years (January to December) = 2000 + 1500 + 2500 + 3000 + 2000 + 1000 + 1500 + 2000 + 5000 + 2000 + 150 + 6000 = 28650

Required average = 28650/12 = 2387.5

In March, April, September and December he sold the more books than average sold books.

---

51. Answer: b

Explanation:

Except Kotak Mahindra, all other are technical institutes.

Whereas 'Kotak Mahindra' is a bank.

Hence, 'Kotak Mahindra' is odd one out.

---

52. Answer: c

Explanation:

The circular figure inside the rectangular figure is rotating in a clock wise manner,

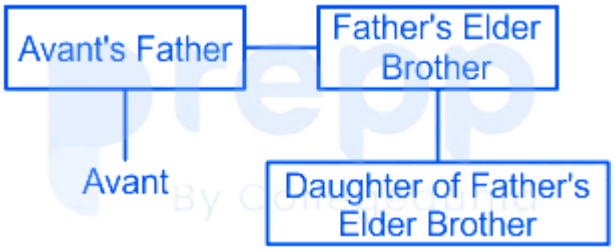
Hence, the correct answer is figure B.

---

53. **Answer: d**

Explanation:

According to the given information,



Avant and the girl in the photograph are cousins.

Hence, the correct answer is 'Cousins'.

---

54. **Answer: d**

Explanation:

Option **4**is correct: **Literature**

- **Bharatiya Jnanpith** is one of the premier literary organizations of India, which is nurturing**literature and culture**through its literary endeavours, which include Awards, Publication, Fellowship and Research for the last several decades.
- This was instituted in 1961 and is given only to Indian writers who write in Indian languages and English.
- **Amitab Ghosh** is honoured with the **54th Jnanpith Award** for his contribution to English Literature and also became the 1st English language writer in the list as all previous winners of the prestigious award have been writers in Indian languages.
- Eminent Malayalam poet **Akkitham Achuthan Namboothir** i has been chosen for the 55th Jnanpith Award

Some important fact about Jnanpith Award,

- The winner is given a cash prize of **Rs. 11 lakh** and a bronze replica of Goddess Saraswati, the Hindu goddess of learning.
- The first recipient of the award was Malayalam writer **G Sankara Kurup** in 1965 for his novel 'Odakkuzhal' (The Bamboo Flute).
- The first woman writer to be awarded this award was **Ashapoorna Devi** , a Bengali writer, in 1976.

---

55. Answer: a

Explanation:

The correct answer is option 1 i.e **Big investment in island nations**

⭐ **Key Points**

- A quiet Maritime strategic diplomacy has emerged as the key theme of this year's Union Budget 2018-19, for a **big investment in all island nations** in the strategic Indian Ocean region.
- The beneficiaries island nation of the Budget is Seychelles, Mauritius, Sri Lanka, and the Maldives.

Country	Capital
Seychelles	Victoria
Mauritius	Port Louis
Sri Lanka	Sri Jayawardenepura Kotte
Maldives	Male

---

56. Answer: d

Explanation:

The pattern followed here is,

O + 2 = Q; Q + 2 = S; S + 2 = U; U + 2 = **W**;

V - 1 = U; U - 1 = T; T - 1 = S; S - 1 = **R**

Hence, 'WR' is the correct answer.

---

57. Answer: c

Explanation:

CONCEPT:

- **Work done (W)**: When a force is applied on a body and there is a displacement of the body in the direction of force then the **work is said to be done by the force**.
  - The SI unit of work is Joule.
  - 1 Joule (J) = 1 Nm

Work (W) = Force (F) × Displacement (S)

- **Power (P)**: The rate of work done is called power.
  - The SI unit of power is the watt (W).

Power (P) = work done (W) / time (t) (P = W / t = J / s)

EXPLANATION:

Since 1 KW = 1000 W

1 hr = 3600s

1 K Wh = 1000 W × 3600s (w = j / s)

1 Kwh = 3.6 × 10^6 J

The correct answer is option 3.

58. **Answer: b**

Explanation:

The correct answer is option 2 i.e MS Dhoni

- M.S. Dhoniinaugurated his first global cricket academy in **UAE**.
- The academy was jointly launched by the Dubai-based Pacific Sports Club and Aarka Sports Club.
- The coaches required in this academy will be from India.

UAE:

- Capital: Abu Dhabi
- Currency: United Arab Emirates dirham

59. **Answer: a**

Explanation:

1. Yes, the money can be used for the development of poor people. This argument is false.

Argument 2 is strong because Sports help athletes gain international exposure and plays a significant role in exposing talent.

60. **Answer: c**

Explanation:

5	35, 49
7	7, 49
7	1, 7
	1, 1

LCM of 35 and 49 is 245

The numbers which are divided by 35 and 49 and leave a remainder 30 in each case are

⇒ 245 × 1 + 30 = 245 + 30 = 275

⇒ 245 × 2 + 30 = 490 + 30 = 520

⇒ 520 is more than 500 so, there is only 1 number 275.

---

61. Answer: a

Explanation:

Except figure D, all other figures are showing water images for letters T, Z, and M.

Hence, figure D is odd one out.

---

62. Answer: b

Explanation:

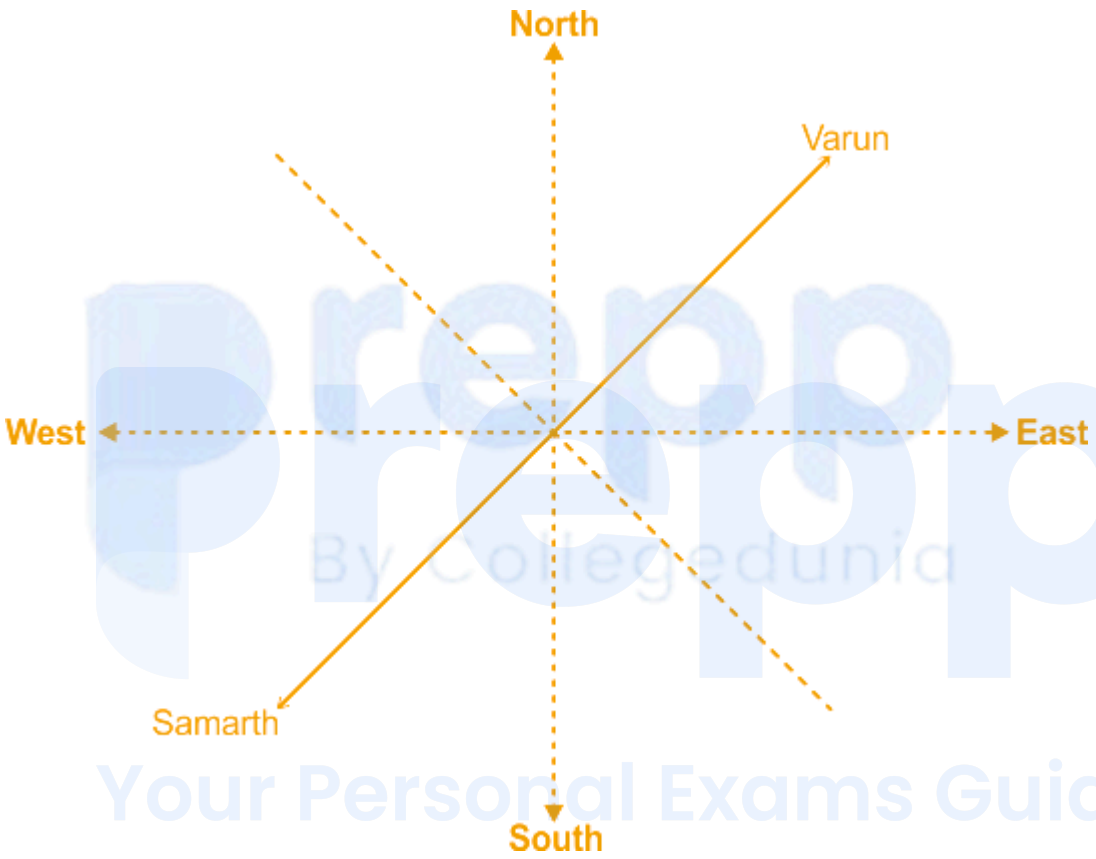
The correct answer is option 2 i.e**Momentum**

- Momentum: It is defined as the quantity of motion of the body.
- It is measured by mass × velocity.
- Momentum depends on both speed and direction
- Momentum is a vector quantity as mass is scaler and velocity is vector
- Momentum = Mass X Velocity(p = mv).
- SI unit Kg-m.s - 1

63. **Answer: c**

Explanation:

According to the given information,



Varun's opponents Samarth will sit opposite to him.

Hence, the correct answer is North-East.

64. **Answer: c**

Explanation:

- Sangama literature is one of the main sources used for documenting the early history of the ancient Tamil country.

- The ancient **Sangam poems** mention numerous kings and princes, the existence of some of whom have been confirmed through archaeological evidence.
- The Sangam landscape is the name given to a poetic device that was characteristic of love poetry in classical Tamil Sangam literature. The core of the device was the categorisation of poems into different **tiṇais**.
- Each *tiṇai* was closely associated with a particular landscape, and imagery associated with that landscape—its flowers, trees, wildlife, people, climate and geography—was woven into the poem in such a way as to convey a mood
- In **Tolkappiyam**, there is a reference to the five-fold division of lands - Kurinji (hilly tracks), Mullai (pastoral), Marudam (agriculture).
- Silappadikaram and Manimekalai are epics of Tamil poetry.
- Silappadikaram is the story of Kovalan, Kannagi his wife, and Madhavi.
- Manimekalai is a Tamil Buddhist poem which gives information about the daughter of Kovalan and Madhavi.

---

65. Answer: b

Explanation:

The correct answer is option 2 i.e **Hyderabad**

- Wings India 2018 was hosted by **Hyderabad**.
- It was the four-day biennial event.
- It was jointly organized by Ministry of Civil Aviation, Airport Authority of India and FICCI
- The theme of the event was **"India-Global Aviation Hub".**

---

66. Answer: b

Explanation:

According to the given information,

Symbols	+	×	÷	-
Codes	×	-	+	÷

Given: 62 - 2 ÷ 8 + 15 × 4 + 6

After changing symbols according

62 ÷ 2 + 8 × 15 - 4 × 6

Now, solving the equation according to BODMAS rule,

= 31 + 8 × 15 - 4 × 6

= 31 + 120 - 24

= 151 - 24

= 127

Hence, the correct answer is 127.

---

67. **Answer: c**

Explanation:

All figures except figure 3 are folded in 90 degree angle.

Hence, the correct answer is option 3.

---

68. **Answer: a**

Explanation:

Total sale of all types of toys = 387200

The sales revenue earned on soft toys is = 25% of 387200 = 387200 × (25/100) = 9,68,00

---

69. Answer: b

Explanation:

Given, ∠A = 60°

⇒ sin A/2 + cosec A

⇒ sin 60°/2 + cosec 60°

⇒ sin 30° + cosec 60°

⇒ 1/2 + 2/√3

⇒ (√3 + 4)/2√3

---

70. Answer: b

Explanation:

Given: Total customer = 50

Number of customer who like any of two brands

= B1 + B2 + C

= 25 + 20 + 5

= 50

Hence, all likes any of the two brands or both the brands.

So, **number of customer who liked none of two brands**

= **Total customer - Number of customer who like any of two brands**

= 50 - 50 = 0

Hence, the correct answer is **"0"** .

---

71. Answer: d

Explanation:

The correct answer is option **4** i.e **6.25**

The new reverse Repo rate announced by the Reserve Bank of India (RBI) as of 1st August 2018 was **6.25 %.**

Rate	Description
Repo rate	It is the rate of interest which is levied on the short-term (2 - 90 days) loans taken by commercial banks from the Reserve Bank of India. Current Repo rate is - 5.15%
Reverse repo rate	It is the rate of interest at which Reserve Bank of India borrows the surplus funds with the commercial banks. Current Reverse repo rate is - 4.90%
MSF rate	It is the rate at which banks can borrow overnight from the Reserve Bank of India. This was introduced in the monetary policy of RBI for the year 2011-12 Current MSF rate is - 5.40%
Bank rate	It is the rate of interest levied on long-term (90 days - 1 year) loans and advances taken by commercial banks from the Reserve Bank of India Current Bank rate is - 5.40%

The rate mentioned in the table are as per Dec 2019.

---

72. Answer: c

Explanation:

As we know,

In expression $[a \sin^2 \theta + b \operatorname{cosec}^2 \theta]$

If $a \leq b$, then minimum value = $a + b$

if $a \geq b$, then minimum value = $2\sqrt{(ab)}$

In the expression $(9 \sin^2 2A + 4 \operatorname{cosec}^2 2A)$

In this expression $9 > 4$ then minimum value = $2\sqrt{(9 \times 4)} = 12$ cm

---

73. Answer: a

Explanation:

The correct answer is option 1 i.e **Badminton**

- Kidambi Srikanth is an Indian **badminton** player.
- He was ranked no. 1 player in men's singles in the world in April 2018
- He was conferred with Padma Shri award in 2018
- He was also conferred with Arjuna award in 2015.

---

74. Answer: c

Explanation:

Let the wrong questions attempt by Mr. X be a then

Right question = $(100 - a)$

According to the question

$\Rightarrow (100 - a) \times 4 - a \times 1 = 340$

$\Rightarrow 400 - 4a - a = 340$

⇒ 5a = 400 − 340 = 60

⇒ a = 60/5 = 12

---

75. Answer: d

Explanation:

The dotted figure is coincided in the complete figure and in the next step the dotted figure become complete figure.

Hence, figure B will be the next figure in the given set of figures.

---

76. Answer: c

Explanation:

Formula Used:

In a quadratic equation $ax^2 + bx + c = 0$

If α and β are the roots of the equation then

α + β (Sum of roots) = -b/a, α . β (Product of the roots) = c/a

Calculation:

Let the roots of the equation $(l - m)x^2 - (6l - 6m)x + 1 = 0$ be α and 2α.

if we compare the above equation by $ax^2 + bx + c = 0$

we get a = (l − m), b = −(6l − 6m) and c = 1

Now, Sum of roots = -b/a,

Sum of roots (α + 2α) = − { − (6l − 6m)}/(l − m) = 6

⇒ α = 6/3 = 2 ----(1)

Given, l : α = 5 : 8

⇒ l = 5/4

Now, the Product of the roots = c/a

Product of the roots α × 2α = 1/(l – m)

⇒ 5/4 – m = 1/8

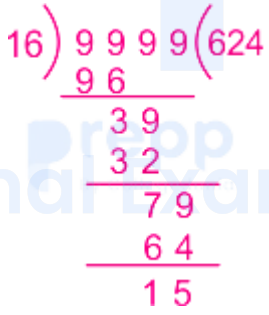
∴ m = 9/8

Note: For this question, the discrepancy is found in the question/answer. So, This question is ignored for all candidates in the exam.

---

77. Answer: a

Explanation:



If we subtract 15 in 9999, then number become = 9999 – 15 = 9984 which is divisible by 16.

---

78. Answer: b

Explanation:

The logic followed here is:

Peacock, Ostrich and Hen are more or less flightless birds whereas Eagle can fly even at a high altitude.

Hence, 'Eagle' is odd one out.

---

79. Answer: b

Explanation:

The correct answer is option 2 i.e **Meghalaya**

- Shillong is the capital of **Meghalaya**.
- The State of Meghalaya is situated in the northeast of India.
- The emergence of Meghalaya as an Autonomous State on 2nd April 1970 and as a full-fledged State on 21st January 1972.

State	Capital
Tripura	Agartala
Meghalaya	Shillong
Nagaland	Kohima
Assam	Dispur

---

80. Answer: d

Explanation:

Detailed so lution:

A = Rs. 1035, time = 4 years and 9 month = 4 + 9/12 = 19/4 years and rate = 8%

As we know,

A = SI + P

A = Prt/100 + P

⇒ 1035 = [P × 8 × (19/4)]/100 + P

⇒ 1035 = 19P/50 + P

⇒ 69P/50 = 1035

⇒ P = 1035 × (50/69) = 750

Short Trick:

Let the principal be 100%

Interest percentage for 1 year = 8%

Interest percentage for 4 years and 9 month = 8 × (4 + 9/12) = 8 × (19/4) = 38%

⇒ 100% + 38% = 1035

⇒ 138% = 1035

⇒ 1% = 7.5

⇒ 100% = 750

---

81. Answer: a

Explanation:

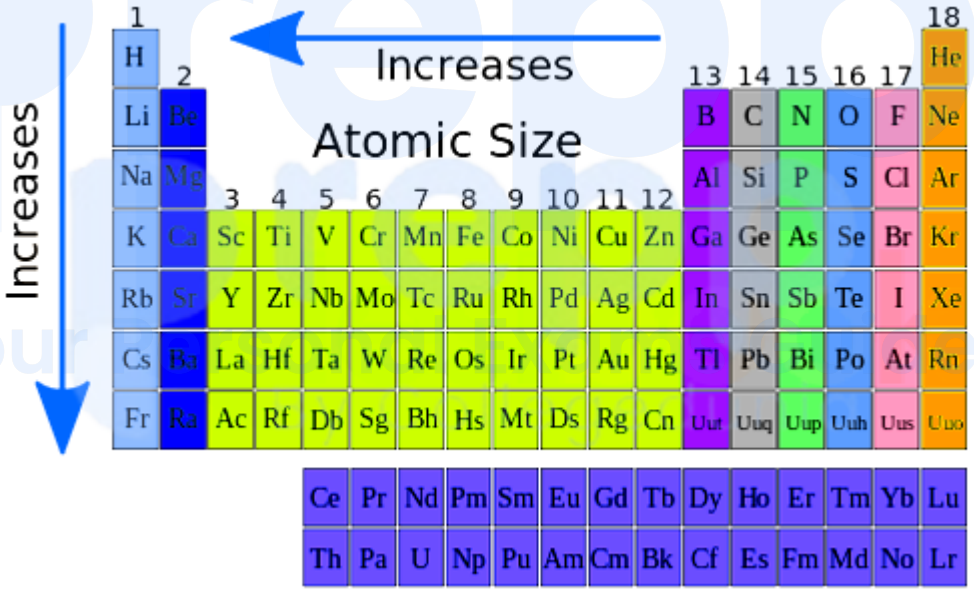
The correct answer is option 1 i.e P

⭐ Key Points

- **Atomic radii**- The distance from the centre of the nucleus to the outermost shell containing electrons called the atomic radius.
- While **moving left to right across a period in the periodic table**, the **atomic number increases**.

- Due to this the **effective nuclear charge** also **increases**.
- This is because the **nucleus pull is high for the electrons**,
- From **right to left** in the **periodic table the atomic radius increase**.
- As **Ar** is the **18 group element**, **Cl** is **the 17 group element**, **S** is the **16 group element**, and **P** is the **15 group element** so **P has the largest- size ions** among these elements.

Name	Formula	Atomic number
Phosphorous	P	15
Chlorine	Cl	17
Argon	Ar	18
sulphur	S	16



---

82. Answer: c

Explanation:

The correct answer is option 3 i.e **Mass × Velocity**

- **Momentum:** It is defined as the quantity of motion of the body.
- It is measured by mass × velocity.
- Momentum depends on both speed and direction
- Momentum is a vector quantity as mass is scaler and velocity is vector
- Momentum = Mass X Velocity(p=mv).
- SI unit Kg-m.s $^{-1}$

---

83. Answer: a

Explanation:

The correct answer is option 1 i.e **Only A is true**

- Sound is produced by vibrating objects.
- **Medium:** It is the matter or substance through which sound is transmitted.
- It can be solid, liquid or gas
- Speed of sound in a different medium at 25°C

Metal/Non-metals	Speed
Aluminium	6420 m/s
Nickel	6040 m/s
Steel	5960 m/s
Brass	4700 m/s
Iron	5950 m/s
Glass	3980 m/s

---

84. Answer: b

Explanation:

The correct answer is option 2 i.e Lok Janshakti Party

- The Lok Jan Shakti Party (LJP) is a premier Indian political organization formed on 28th October 2000 and led by the Honourable Shri Ram Vilas Paswan.
- The party was formed after the separation from the Janata Dal (United).
- The party has considerable amongst Dalits in Bihar.

Lok Janshakti Party:

- Leader: Ram Vilas Paswan
- Founder: Ram Vilas Paswan
- Founded: November 2000

---

85. Answer: a

Explanation:

The correct answer is option 1 i.e Metal oxide + acid salt + water

⭐ Key Points

- Metal oxides are basic in nature.
- When an acid reacts with a metal oxide they both neutralize each other.
- The new compounds formed are salt and water.

Acid + Metal Oxide Salt + Water

- **Example:** Calcium is metal and calcium oxide is a metallic oxide which is basic in nature.
- When an acid (hydrochloric acid) reacts with calcium oxide, a neutralization reaction takes place and calcium chloride along with water is formed.

  2HCl + CaO CaCl2 + H2O

---

86. Answer: d

Explanation:

As we know,

$\Rightarrow \frac{(0.22)^3-(0.11)^3}{0.0484+0.0242+0.0121} = ?$

$\Rightarrow a^3 - b^3 = (a - b)(a^2 + b^2 + ab)$

Suppose a = 0.22 and b = 0.11, then

$\Rightarrow (a^3 - b^3) / (a^2 + b^2 + ab)$

$\Rightarrow (a - b)(a^2 + b^2 + ab) / (a^2 + b^2 + ab)$

$\Rightarrow (a - b)$

$\Rightarrow 0.22 - 0.11$

$\Rightarrow 0.11$

---

87. Answer: a

Explanation:

If the expression $4x^2 + kx + 5$ divisible by x - 1,

$\Rightarrow 4x^2 + kx + 5 = 0$ ----(1)

Put x = 1 in equation (1)

$\Rightarrow 4 \times 1^2 + k \times 1 + 5 = 0$

$\Rightarrow 4 + k + 5 = 0$

$\Rightarrow k = -9$

Put the value k in equation

$\Rightarrow 4x^2 - 9x + 5 = 0$

$\Rightarrow 4x^2 - 4x - 5x + 5 = 0$

$\Rightarrow 4x(x - 1) - 5(x - 1) = 0$

$\Rightarrow (x - 1)(4x - 5) = 0$

So, expression divisible by $(x - 1)$ and $(4x - 5)$.

---

88. Answer: a

Explanation:

The correct answer is option 1 i.e **Bhartruhari Mahtab**

Outstanding Parliamentarian Award:

- This award was instituted by Indian Parliamentary Group (IPG) and was given annually since 1995.
- This award is given to the most Outstanding Parliamentarians selected by the Award Committee.
- The President of India, Shri Ram Nath Kovind, presented the Outstanding Parliamentarian Award for the years 2013-2017, on August 1, 2018, in New Delhi.

Outstanding Parliamentarian Award 2013-2017

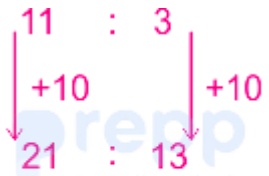
2013	Former Rajya Sabha member Najma Heptulla
2014	Lok Sabha member Hukumdev Narayan Yadav
2015	Rajya Sabha member Ghulam Nabi Azad
2016	Lok Sabha member Dinesh Trivedi
2017	Lok Sabha member Bhartruhari Mahtab

---

89. **Answer: a**

Explanation:

Short Trick:



10 Units = 20 Years

1 Unit = 2 Years

10 unit = 20 years

1 unit = 2 years

10 years ago age of father = 11 × 2 = 22

So, present age of father = 22 + 10 = 32 years

10 years ago age of son = 3 × 2 = 6

So, present age of son = 6 + 10 = 16 years

Detailed Solution:

Let age ratio of father to son ten year ago was = 11x : 3x

According to the question

⇒ (11x + 20)/(3x + 20) = 21/13

⇒ (11x + 20) × 13 = (3x + 20) × 21

⇒ 143x + 260 = 63x + 420

⇒ 143x − 63x = 420 − 260

⇒ 80x = 160

⇒ x = 160/80 = 2

10 years ago father's age = 11x = 11 × 2 = 22

Father's present age = 22 + 10 = 32 years

10 years ago son's age = 3x = 3 × 2 = 6

Son's present age = 6 + 10 = 16 years

---

90. Answer: a

Explanation:

The correct answer is option 1 i.e **Diamond**

- **Melting Point**- The melting point is usually defined as the point at which materials change from a solid to a liquid.
- **Boiling Point-** It is the temperature at which the vapour pressure of the liquid becomes equal to the atmospheric pressure of the liquid's environment. At this temperature, the liquid is converted into a vapour.
- Diamond is made up of carbon-carbon covalent bonds.
- A lot of thermal energy is required to break a covalent bond
- **This makes the diamond's melting point and boiling point very high.**

---

91. Answer: a

Explanation:

1 student reads = 5 subjects

1300 students read = 5 × 1300 = 6500 subjects

1 subject is read by = 65 students

So, total number of subjects = 6500/65 = 100

92. **Answer: a**

Explanation:

Total revenue of the company = 36,28,000

Total revenue made on sales of wallets and belts = (5% + 20%) of 36,28,000 = 25% of 36,28,00 = 36,28,000 × (25/100) = 9,07,000

93. **Answer: d**

Explanation:

The correct answer is option 4 i.e HCL Infosystems Ltd.

- HCL Infosystems appointed **Rangarajan Raghavan** as the new Director and MD of the company.
- He succeeded Premkumar Seshadri as he has resigned from his post.

HCL Infosystems Ltd.

- Headquarters: Noida
- Founder: Shiv Nadar

94. **Answer: d**

Explanation:

The correct answer is option 4 i.e Lahore

- The Indian National Congress, on 19 December 1929, passed 'Purna Swaraj' means total independence resolution at its**Lahore session.**

- In the same session, Jawaharlal Nehru was elected as president of the Congress.
- It was announced publically on **26 January 1930.**
- Nehru marched to the **banks of Ravi** with the Congress members and they took an oath not to rest until Purna Swaraj was achieved.
- On December 21, 1929, the Tiranga (tricolour) flag was unfurled.
- The first Independence Day was celebrated on January 26, 1930

---

95. Answer: b

Explanation:

The correct answer is option 2 i.e **Sagar Baheti**

- **Sagar Baheti** has become the first visually impaired Indian runner to complete the historic Boston Marathon in 2017
- He was also the first Indian runner, who participate in the Boston Marathon.
- He completed 42.16 km in 4 hours.

Boston Marathon:

- It is the world's hardest and one of the oldest and competitive marathon.
- Boston, US hosts the marathon every year.
- It is one of the 6 major marathons which are held throughout the world.

---

96. Answer: c

Explanation:

Option **3** is correct i.e**Fundamental duties**

- **Fundamental duties of citizens** were added to the constitution by the 42nd Amendment in 1976.
- This was done on the recommendations of the **Swaran Singh Committee.**

- India borrowed the concept of **Fundamental Duties** from the **USSR (Russia)** .
- These duties set out in **Part IV-A,Article 51(A)** of the Constitution.

Amendment Procedure	Constitution of South Africa, Article 368
Fundamental Rights	Constitution of the USA, Article 12 to 35
Directive Principal	Constitution of Ireland, Article 36 to 51

---

97. Answer: d

Explanation:

In a certain coding language,

Similarly,

Hence, the correct answer is 'DCFD'.

---

98. Answer: a

Explanation:

Option **1** is correct, i.e. They are multi-cellular and composed of epithelial tissues.

Rhizoids:

- They are simple, hair-like projections.
- They grow from the epidermal cells of bryophytes.
- **Bryophyte:** It refers to the group of plants which includes mosses, liverworts, and hornworts.
- They are like root hairs which are found in complex vascular plants
- They are formed from single cells, unlike roots, which are multicellular organs

---

99. Answer: a

Explanation:

Option **1** is correct:

- **Phototropism** is the ability of a plant or other **photosynthesizing organism**, to grow directionally in response to a light source.
- Plant and other autotrophs need to manufacture their own food; they usually do this through **photosynthesis**.
- Through photosynthesis, organisms convert **water**, **carbon dioxide** (CO_2) and light into **sugar**, which is used for energy and growth.
- Plants can not move around to acquire what they need, so in order to maximize the amount of light that they receive through the leaves, they use **phototropism**.
- Positive phototropism is the response of a plant toward a light source, while **negative phototropism** causes growth in the opposite direction.
- If the plant parts i.e. **stem** moves towards the light, show **positive tropism**. And if the plant part that is **root** moves away from light, then it shows **negative tropism**.

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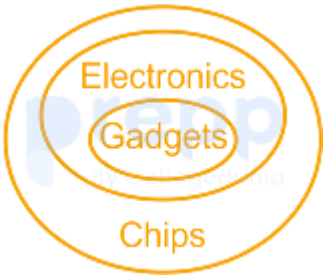
100. Answer: b

Explanation:

The least possible Venn diagram is as follows,



Conclusions:

1. All gadgets are chips – True (all gadgets are electronic, All electronics are chips, hence, all gadgets are chips)

2. Some chips are electronics. – True (electronic exist in some part of chips and it is definite)

Hence, both conclusions I and II follows.