# NTPC CBT-II 2016 Official Paper (Held On: 18 Jan, 2017 Shift 3) (Previous Year Paper)

RRB NTPC • 2016 • 120 questions • 90 minutes • Answer key and solutions

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

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## FULL TEST

**Directions**

Read the information given below and answer the questions that follow:

The following table gives the data on the number of students who appeared, qualified, and was selected from various states on a national level exam.

| Students who | | | |
|---|---|---|---|
| State | Appeared | Qualified | Were Selected |
| Maharashtra | 8500 | 950 | 80 |
| Uttar Pradesh | 5600 | 620 | 85 |
| Kerala | 7500 | 720 | 48 |
| Delhi | 4800 | 400 | 48 |
| Arunachal Pradesh | 7000 | 650 | 70 |

**Q1.** What percentage of students who appeared in the exam were selected ?

**(a)** 1.08%
**(b)** 0.99%
**(c)** 2%
**(d)** 2.11%

**Q2.** Which State has the highest ratio of number of students selected to the national level exam who qualified from that State?

**(a)** Maharashtra
**(b)** Delhi
**(c)** Uttar Pradesh
**(d)** Kerala

**Q3.** Which State has the lowest percentage of qualifications over those who had appeared?

**(a)** Maharashtra
**(b)** Kerala
**(c)** Delhi
**(d)** Arunachal Pradesh

**Q4.** Which State has the highest ratio of number of students selected to the number of students who appeared from that State?

**(a)** Maharashtra
**(b)** Delhi
**(c)** Uttar Pradesh

**(d)** Kerala

**Q5.** JAM (Jan Dhan, Aadhaar, Mobile) - was introduced recently. As per the Economic Survey 2015, Which of the following is NOT true about JAM?

**(a)** 50.4 Crore Jan Dhan Accounts were opened
**(b)** Population coverage through Aadhaar is 75.8%
**(c)** 20.8 Crore Jan Dhan Accounts were opened
**(d)** Mobile Teledensity is 79.78%.

**Q6.** A batsman scored 150 runs in a one-day cricket match. He hit 20 fours and 5 sixes. Calculate the percentage of runs he scored by running between the wickets.

**(a)** 25%
**(b)** 73.33%
**(c)** 50.66%
**(d)** 26.67%

**Q7.** In 2015, which ex-President of Romania was prosecuted for crime against humanity?

**(a)** John Ashe
**(b)** Khaled Bahah
**(c)** Richard Heck
**(d)** Ion Iliescu

**Q8.** Based on the relationship between the first two words, find out the missing word.

CIRCLE : CIRCUMFERENCE :: SQUARE : _____

**(a)** DIAGONAL
**(b)** PERIMETER
**(c)** VOLUME
**(d)** AREA

**Q9.** Which of these is NOT an operating system?

**(a)** Android
**(b)** Scala
**(c)** UNIX
**(d)** Windows

**Q10.** The profits of a company rose 10% from April to May, then dropped 20% from May to June, then rose 50% from June to July. What was the percentage increase from April to July?

**(a)** 15%
**(b)** 45%
**(c)** 32%
**(d)** 13%

**Q11.** Which of the following countries won the ICC Women's World Twenty20 Championship 2016?

**(a)** West Indies
**(b)** Australia
**(c)** England
**(d)** India

**Q12.** Two numbers are respectively 40% and 60% more than a third number. The ratio of first number to the second number is:

**(a)** 7 : 9
**(b)** 8 : 9
**(c)** 8 : 7
**(d)** 7 : 8

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**Q13.** A number series is given below with one number missing, shown by a "?". Choose from the options the correct alternative that will fit the pattern of the series.

2, 6, 12, ?, 30, 42, 56

**(a)** 20
**(b)** 21
**(c)** 23
**(d)** 28

**Q14.** You are given a question followed by two statements numbered I and II. You have to decide whether the data provided on the statements are sufficient to answer the question.

What does 'sen' stand for in the code language?

I. In the code language, 'you are beautiful' is written as 'sen tou ki'.

II. In the same code language, 'will you have coffee' is written as 'ti sen ae toce'.

**(a)** Statement I alone is sufficient
**(b)** Both statements I and II together are not sufficient
**(c)** Statement II alone is sufficient
**(d)** Both statements I and II together are necessary

**Q15.** HCF of 12/5, 21/6, 9/4 and 18/3 is:

**(a)** 1/20
**(b)** 3/2
**(c)** 3/5
**(d)** 3/7

**Q16.** In a class, the ratio of boys to girls is 4 : 5. If four new boys joined the class, the number of boys would increase by 20%. Find the number of girls in the class.

**(a)** 30
**(b)** 35
**(c)** 20
**(d)** 25

**Q17.** Which of the following is insoluble in water?

**(a)** Calcium Carbonate
**(b)** Sodium Chloride
**(c)** Lithium Bromide
**(d)** Magnesium Iodide

**Q18.** Which of the following is used by a computer to translate the procedure oriented language program into machine language program?

**(a)** Scanner
**(b)** Plotter
**(c)** Compiler
**(d)** VDU (Video Display Unit)

**Q19.** If X and Y can complete a piece of work in 15 days, and X alone can do the same work in 30 days, find how many days will Y alone take to complete the same work?

**(a)** 60 days
**(b)** 45 days
**(c)** 30 days
**(d)** 15 days

**Q20.** Which of the following is NOT secreted by the stomach as a component of Gastric Juice?

**(a)** Potassium Chloride
**(b)** Sulphuric acid
**(c)** Hydrochloric Acid

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**(d)** Sodium Chloride

**Q21.** The midpoints of the sides of an equilateral triangle PQR are X, Y and Z if the perimeter of triangle PQR is 24 cm, then what is the perimeter of triangle XYZ?.

**(a)** 96 cm
**(b)** 36 cm
**(c)** 12 cm
**(d)** 48 cm

**Q22.** There is a 40% increase in an amount in 4 years at simple interest. What will be the compound interest on Rs. 6000 after 3 years at the same rate?

**(a)** Rs. 1260
**(b)** Rs. 1986
**(c)** Rs. 19860
**(d)** Rs. 7986

**Q23.** As on June 2015, (in absolute terms) what is India's rank globally in terms of contribution to greenhouse gas emissions?

**(a)** 3rd
**(b)** 2nd
**(c)** 4th
**(d)** 5th

**Q24.** Chitra introduced Divya as Chitra's sister's husband's daughter's only maternal aunt's mother-in-law. How is Chitra related to Divya?.

**(a)** Granddaughter
**(b)** Mother
**(c)** Daughter-in-law
**(d)** Daughter

**Q25.** Which of the following companies became the first Indian company to join the EP100 campaign led by 'The Climate Group'?

**(a)** Ashok Leyland
**(b)** TVS Motor
**(c)** Tata Motors
**(d)** Mahindra & Mahindra

**Q26.** A number series is given below with one number missing, shown by a "?". Choose from the options the correct alternative that will fit the pattern of the series.

4, 9, 19, ?, 79, 159

**(a)** 59
**(b)** 33
**(c)** 39
**(d)** 34

**Q27.** Which of the following is one of the largest and the most versatile space telescopes that was launched into low Earth orbit in 1990?

**(a)** Chandra
**(b)** Hubble
**(c)** James Webb
**(d)** Spitzer

**Q28.** India does NOT share its boundaries with which of the following countries?

**(a)** China
**(b)** Myanmar
**(c)** Tajikistan

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**(d)** Bhutan

**Q29.** In December 2015, Sadhana Shivdasani passed away. She was a popular _____.

**(a)** Politician
**(b)** Badminton Player
**(c)** Musician
**(d)** Actress

**Q30.** Four words are given below out of which three are alike in some manner and one is different. Which one is different from the rest?

**(a)** Blackboard
**(b)** Paper
**(c)** Slate
**(d)** Chalk

**Q31.** Which of the following uses only convex lens?

**(a)** Car Headlights
**(b)** Flashlights
**(c)** Microscope
**(d)** Peepholes

**Q32.** If Anita walks a certain distance at 13 km/hr. instead of 10 km/hr., she would walk 30 km more. The actual distance travelled by her is :

**(a)** 100 km
**(b)** 50 km
**(c)** 60 km
**(d)** 25 km

**Q33.** The group of monuments at Mahabalipuram in Tamil Nadu was built by the

**(a)** Cholas
**(b)** Pandyas
**(c)** Chalukyas
**(d)** Pallavas

**Q34.** A train running at 120 km/hr crosses a pole in 9 seconds. What is the length of the train?

**(a)** 240 m
**(b)** 300 m
**(c)** 360 m
**(d)** 600 m

**Q35.** The ratio between the speeds of two trains is 4 : 5. If the second train runs 800 km in 8 hours, then what is the speed of the first train?

**(a)** 95 km/hr
**(b)** 85 km/hr
**(c)** 75 km/hr
**(d)** 80 km/hr

**Q36.** What does the term 'Yajur' in 'Yajur Veda' mean?

**(a)** Life
**(b)** Nature
**(c)** Sacrifice
**(d)** Truth

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**Q37.** Based on the relationship between the first two words, find out the missing word.

USA : DOLLAR :: TURKEY : _____

**(a)** TAKA
**(b)** KYAT
**(c)** LIRA
**(d)** BAHT

**Q38.** 'Transcendence : My Spiritual Experiences with Pramukh Swamiji' published in June 2015 is a book authored by which of the following political leaders?

**(a)** A. P. J. Abdul Kalam
**(b)** Mamata Banerjee
**(c)** Atal Bihari Vajpayee
**(d)** Pranab Mukherjee

**Q39.** In a village of 200 persons, 111 are literate. What is the percentage of illiterate people in the village?

**(a)** 45%
**(b)** 44.5%
**(c)** 55.5%
**(d)** 54%

**Q40.** Which of the following Articles of the Constitution of India defines the 'Right to Education'?

**(a)** Article 12
**(b)** Article 5
**(c)** Article 23
**(d)** Article 21A

**Q41.** Pankaj buys 10 lemons for Rs. 80. At what price should he sell a dozen lemons, if he wishes to make a profit of 25%?

**(a)** Rs. 10
**(b)** Rs. 120
**(c)** Rs. 100
**(d)** Rs. 240

**Q42.** Richard's car runs 25 kms in one litre of petrol. If petrol costs Rs. 75/litre, then how may kilometers can Richard's car go on Rs. 1500 of petrol?

**(a)** 500 km
**(b)** 450 km
**(c)** 340 km
**(d)** 530 km

**Q43.** Binary starts walking South. After 21 km, he turns to his right and walks straight for 20 km. How far is he from his starting position?

**(a)** 29.68 km
**(b)** 29.00 km
**(c)** 41.00 km
**(d)** 24.00 km

**Q44.** In terms of percentage profit, which of the following transactions is the best?

**(a)** Cost Price = 60, Profit = 32
**(b)** Cost Price = 80, Profit = 44
**(c)** Cost Price = 50, Profit = 26
**(d)** Cost Price = 70, Profit = 40

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**Q45.** Moiz pointed towards a photo and said, "The man is my mother's only daughter-in-law's son's maternal grandfather's only son". If Moiz has no other sibling other than a sister, then how is that man related to Moiz?

**(a)** Maternal uncle
**(b)** Grandfather
**(c)** Paternal Uncle
**(d)** Brother-in-law

**Directions**

Read the passage given below and answer the questions that follow:

Eight friends - (Rita, Priya, Sita, Aarti, Sahil, Sameer, Biswas, and Anil) -are sitting around a circular table facing each other.

Rita's husband is sitting directly across the table from her.

Priya's husband, and her best friend, Rita are sitting on her either side.

Sameer is to the immediate left of Anil and third to the right of Rita.

Aarti is sitting to the immediate right of Rita and also to the left of Sameer's wife.

Aarti and Sahil are the only two unmarried people in the group.

**Q46.** In which of the following options, the first person is sitting to the immediate right of the second person?

**(a)** Priya, Sahil
**(b)** Aarti, Priya
**(c)** Sita, Sameer
**(d)** Sahil, Anil

**Q47.** Who is Rita's husband?

**(a)** Anil
**(b)** Biswas
**(c)** Sahil
**(d)** Sameeer

**Q48.** Which of the following is TRUE?

**(a)** Sahil is directly across the table from Aarti
**(b)** Sameer is the only one sitting between Aarti and Anil
**(c)** Sahil is second to the left of Aarti
**(d)** Sita is sitting third to the left of Biswas

**Q49.** What is the minimum age requirement for a person to be elected as the President of India?

**(a)** There is no age requirement
**(b)** Completed the age of 25 years
**(c)** Completed the age of 30 years
**(d)** Completed the age of 35 years

**Q50.** Which of the following is used in water purification?

**(a)** Turgor pressure
**(b)** Osmosis
**(c)** Reverse Osmosis
**(d)** Cytolysis

**Q51.** Lifeline Express (LLE), the World's first 'Hospital on Train', Went on its maiden journey on

**(a)** July 16, 2000
**(b)** July 16, 1993
**(c)** July 16, 1991
**(d)** July 16, 1992

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**Q52.** Which of the following is an annual nationwide campaign in Singapore encouraging awareness and action for the environment?

**(a)** Eco Action Day
**(b)** My Planet Day
**(c)** Earth Day
**(d)** Cycling Day

**Q53.** It takes 12.5 minutes to completely fill a vessel with juice. However, kids are continuously drinking juice from the vessel at a rate which can empty the vessel in 25 minutes. At the current rate, how long will it take to completely fill the vessel?

**(a)** 20 minutes
**(b)** 12.5 minutes
**(c)** 25 minutes
**(d)** 30 minutes

**Q54.** If GUEST is coded as 9-19-7-17-22, then HOUSE is coded as :

**(a)** 10-17-23-21-7
**(b)** 10-13-23-17-7
**(c)** 6-13-19-17-3
**(d)** 10-13-19-17-3

**Q55.** Jallianwala Bagh massacre took place in the year -

**(a)** 1936
**(b)** 1919
**(c)** 1921
**(d)** 1947

**Q56.** Who said - 'Give me blood and I will give you freedom'?

**(a)** Jawaharlal Nehru
**(b)** Mahatma Gandhi
**(c)** Chandra Shekhar Azad
**(d)** Subhas Chandra Bose

**Q57.** In Data Processing, what does the abbreviation SAP stand for ?

**(a)** Systems, Applications, Products
**(b)** Sales, Allocations, Purchases
**(c)** Systems, Authorizations, Programs
**(d)** Systems, Algorithms, Processes

**Q58.** Which two signs should be interchanged to make the following equation correct?

56 + 7 ÷ 5 × 3 - 2 = 21

**(a)** ÷ and +
**(b)** × and +
**(c)** ÷ and -
**(d)** × and -

**Q59.** As per National Horticulture Board's report titled 'Horticulture Statistics at a glance 2015', the largest producer of apples (in absolute terms) in India comes from :

**(a)** Uttarakhand
**(b)** Arunachal Pradesh
**(c)** Himachal Pradesh
**(d)** Jammu and Kashmir

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**Q60.** Priya invested a certain amount of money and got back an amount of Rs. 8800 after 3 years. If the rate of simple interest is 40%, what is the principal amount invested by Priya?

**(a)** Rs. 7333
**(b)** Rs. 4333
**(c)** Rs. 4000
**(d)** Rs. 7000

**Q61.** The endangered Asiatic Lions are found in which Indian State?

**(a)** Jammu and Kashmir
**(b)** West Bengal
**(c)** Karnataka
**(d)** Gujarat

**Q62.** UN World Environment Day is celebrated on:

**(a)** 10^(th) of December every year
**(b)** 5^(th) of June every year
**(c)** 5^(th) of September every year
**(d)** 10^(th) of June every year

**Q63.** Find the LCM of 15, 25 and 125.

**(a)** 5
**(b)** 125
**(c)** 300
**(d)** 375

**Q64.** _____, an online system for redressal of service-related grievances of serving and former Indian Railway employees, was formally launched in 2016.

**(a)** Parivaad Portal
**(b)** Pratikar Portal
**(c)** Nivaran Portal
**(d)** Samadhan Portal

**Q65.** A certain sum amounts to Rs. 7200 in 2 years at 20% per annum compound interest, compounded annually. Find the sum.

**(a)** Rs. 4800
**(b)** Rs. 6000
**(c)** Rs. 5400
**(d)** Rs. 5000

**Q66.** Solve : 4/11 + 2/7 + 3/5

**(a)** 37/35
**(b)** 481/385
**(c)** 13/35
**(d)** 37/385

**Q67.** As per the Union Budget 2016-2017, what percentage of FDI will be allowed through FIPB (Foreign Investment Promotion Board) route in marketing of food products produced and manufactured in India?

**(a)** 75%
**(b)** 100%
**(c)** 71.25%
**(d)** 29.5%

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**Q68.** Arun said, "That lady is my mother's brother's mother's only daughter's daughter". How is that lady related to Arun?

**(a)** Grandmother
**(b)** Mother
**(c)** Wife
**(d)** Sister

**Q69.** What is the approximate value of pH of Human Blood?

**(a)** 7.4
**(b)** 8.1
**(c)** 6.7
**(d)** 7.9

**Q70.** What does UNFCCC stand for?

**(a)** United Nations Framework Control on Climate Change
**(b)** United Nations Framework Convention on Climate Change
**(c)** United Nations Framework Communications on Climate Change
**(d)** United Nations Framework Climate Communications Council

**Q71.** If the Standard deviation of a distribution is 6, what is the value of its variance?

**(a)** 8
**(b)** 24
**(c)** 36
**(d)** 12

**Q72.** An alphabet series is given below with one term missing shown by a "?". Choose from the options the correct alternative that will fit the pattern of the series.

B, C, F, ?, R, A

**(a)** H
**(b)** M
**(c)** G
**(d)** K

**Directions**

Read the passage given below and answer the questions that follow:

In a class of 32 students, 20 of them like Spiderman and 14 like Batman. 6 students like neither Spiderman nor Batman.

**Q73.** How many students like both Spiderman and Batman?

**(a)** 6
**(b)** 8
**(c)** 7
**(d)** 5

**Q74.** How many students like either Spiderman or Batman?

**(a)** 28
**(b)** 12
**(c)** 6
**(d)** 18

**Q75.** Rs. 200 was distributed among three persons - Anil, Binay, and Chinmay. Binay received 50% more than Chinmay. Anil received Rs. 10 more than 150% of what Binay received. How much money did Anil receive?

**(a)** Rs. 40
**(b)** Rs. 60
**(c)** Rs. 43
**(d)** Rs. 100

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**Q76.** Based on the statement given below, choose the best possible conclusion(s) that follows:

Statement:

There is no such thing as free lunch.

Conclusions:

I. Things that are free, always have a hidden cost.

II. It is impossible to get something for nothing.

**(a)** Only conclusion II follows
**(b)** Only conclusion I follows
**(c)** Both conclusion I and II follow
**(d)** Neither conclusion I nor II follows

**Q77.** 'Integrated Circuits' belonged to which of the following generation of Computers?

**(a)** Third Generation
**(b)** Fifth Generation
**(c)** Fourth Generation
**(d)** Second Generation

**Q78.** Based on the relationship between the first two words, find out the missing word.

TERRESTRIALS : ANTS :: AMPHIBIANS : _____

**(a)** FISH
**(b)** DOGS
**(c)** FROGS
**(d)** SNAILS

**Q79.** Who invented the World Wide Web (WWW) in 1989?

**(a)** Robert E. Kahn
**(b)** Linus Torvalds
**(c)** Tim Berners-Lee
**(d)** Ted Nelson

**Q80.** A piece of wire, bent in the shape of a square having 44 cm as its side, is subsequently bent to form a circle. What will be the radius of the circle?

**(a)** 108 cm
**(b)** 56 cm
**(c)** 14 cm
**(d)** 28 cm

**Q81.** If B = 25 and BEST = 62, then STABLE = ?

**(a)** 100
**(b)** 101
**(c)** 102
**(d)** 103

**Q82.** What was the name of the lunar mission that landed humans on the Moon?

**(a)** Lunokhod 1
**(b)** Apollo 11
**(c)** Chandrayan I
**(d)** Viking 1

**Q83.** If 'J' means '×', 'K' means '÷', 'Q' means '+' and 'T' means '-' then what is the value of:

26 J 74 K 4 T 5 Q 2

**(a)** 220
**(b)** 478
**(c)** 376

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**(d)** 488

**Q84.** Manu's piggy bank contains Rs. 221 in the form of 50 paise, Rs. 1 and Rs. 2 coins in the ratio of 4 : 3 : 6. What is the number of 50 paise coins in the piggy bank?

**(a)** 52
**(b)** 13
**(c)** 104
**(d)** 26

**Q85.** In April 2016, who became the first non-cricketer to be included in the Cricket Club of India's Legends Club?

**(a)** Milkha Singh
**(b)** Prakash Padukone
**(c)** Nandu Natekar
**(d)** Dhanraj Pillay

**Q86.** Based on the statement(s) given below, choose the best possible conclusion(s) that follows:

Statements:

People who exercise regularly are health conscious.

Meena, in spite of her busy schedule, exercises every day.

Conclusions:

I. Meena is health-conscious.

II. Meena's family has inculcated the importance of exercise right from her childhood.

**(a)** Both conclusion I and II follow.
**(b)** Neither conclusion I nor II follows
**(c)** Only conclusion II follows
**(d)** Only conclusion I follows.

**Q87.** If '+' means '×', '-' means '÷', '×' means '-' and '÷' means '+' then what is the value of :

18 + 12 - 4 ÷ 5 × 6

**(a)** 65
**(b)** 53
**(c)** 59
**(d)** 63

**Q88.** Which sportsperson's autobiography was published with the title 'Playing it my way'?

**(a)** Ryan Harris
**(b)** Leander Paes
**(c)** Sania Mirza
**(d)** Sachin Tendulkar

**Q89.** An alphabet series is given below with one term missing, shown by a "?". Choose from the options the correct alternative that will fit the pattern of the series.

ADM, BFL, CHK, ?, ELI, FNH

**(a)** DHL
**(b)** DHJ
**(c)** DJJ
**(d)** DJK

**Q90.** Which of the following States came into existence in 2014?

**(a)** Telangana
**(b)** Jharkhand
**(c)** Uttarakhand
**(d)** Chhattisgarh

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**Q91.** In the question given below, are given two statements followed by a few conclusions. You have to take the two given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions follow the two given statements disregarding commonly known facts.

Statements :

A. All spears are arrows

B. All arrows are bullets

Conclusions :

1. Some bullets are arrows
2. Some arrows are spears
3. Some bullets are spears
4. No bullet is an arrow

**(a)** Conclusions 1 and 2 follow
**(b)** Conclusions 2, 3 and 3 follow
**(c)** All conclusions follow
**(d)** Conclusions 1, 2 and 3 follow

**Q92.** An alphabet series is given below with one term missing, shown by a "?". Choose from the options the correct alternative that will fit the pattern of the series.

CX, EV, GT, ?, KP, MN

**(a)** IR
**(b)** HU
**(c)** LR
**(d)** JS

**Q93.** What is the unit digit in [4523^(1632) × 2224^(1632) × 3225^(1632)]?

**(a)** 1
**(b)** 0
**(c)** 4
**(d)** 2

**Q94.** A trader buys a Persian rug for Rs. 1235 and sells it for Rs. 1500. Find his gain percentage.

**(a)** 20.1%
**(b)** 21.46%
**(c)** 17.67%
**(d)** 22.5%

**Q95.** Who is the author of the novel 'Anandamath'?

**(a)** Dinabandhu Mitra
**(b)** Subramania Bharathi
**(c)** Bhartendu Harish Chandra
**(d)** Bankim Chnadra Chattopadhyay

**Q96.** In the question given below, you are given two statements followed by a few conclusions. You have to take the two given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusions follow the two given statements disregarding commonly known facts.

Statements:

A. Some reds are black

B. All blacks are white

Conclusions:

1. Some white are black
2. All blacks are red
3. All whites are black
4. Some whites are red

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**(a)** Conclusions 1 and 3 follow
**(b)** Only conclusion 1 follows
**(c)** Only Conclusion 1 and 4 follows
**(d)** Conclusions 1, 3 and 4 follow

**Q97.** Given below is a common English word in its jumbled form. Find the word and based on that, answer what is it?

OPTTAO

**(a)** Computer
**(b)** Hospital worker
**(c)** Drinks container
**(d)** A kind of vegetable

**Q98.** Based on the relationship between the first two words, find out the missing word.

ODISHA : ODISSI :: KERALA : _____

**(a)** KATHAKALI
**(b)** KATHAK
**(c)** KUCHIPUDI
**(d)** BHARATANATYAM

**Q99.** X, Y and Z can do a piece of work in 30 days, 45 days and 90 days respectively. In how many days can the work be completed if X is assisted by Y and Z together, on every second day?

**(a)** 10 days
**(b)** 20 days
**(c)** 15 days
**(d)** 30 days

**Q100.** Solve : 0.275 + 0.569 - 0.336

**(a)** 0.123
**(b)** 0.508
**(c)** 0.457
**(d)** 0.594

**Q101.** Which among the following is not in the list of UNESCO World Heritage sites in India?

**(a)** Rani ki Vav, Gujarat
**(b)** Chhattrapati Shivaji Terminus, Maharashtra
**(c)** Bhimbetka Caves, Madhya Pradesh
**(d)** Bada Imambara, Uttar Pradesh

**Q102.** An electric bulb of 60 W is connected to a source of 240 V. The current drawn by the bulb will be:

**(a)** 4 A
**(b)** 2.5 A
**(c)** 0.25 A
**(d)** 0.4 A

**Q103.** According to the Indian Railway Catering and Tourism Corporation (IRCTC) survey published in May 2016, which of the following A 1 railway stations was declared as the 'Cleanest A 1 Railway Station of India'?

**(a)** Bilaspur
**(b)** Surat
**(c)** Varanasi
**(d)** Rajkot

**Q104.** If Ram puts Rs. 2000 in a savings account that earns 20% annual interest compounded half-yearly, how much money will be in the account after one year?

**(a)** Rs. 3530
**(b)** Rs. 2420

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**(c)** Rs. 2630
**(d)** Rs. 3870

**Q105.** Which of the following pair was awarded the Bharat Ratna in March 2015?
**(a)** APJ Abdul Kalam & Amitabh Bachchan
**(b)** APJ Abdul Kalam & Madan Mohan Malaviya
**(c)** Atal Bihari Vajpayee & APJ Abdul Kalam
**(d)** Madan Mohan Malaviya & Atal Bihari Vajpayee

**Q106.** Solve: 345678 × 999999
**(a)** 345677653422
**(b)** 354677654322
**(c)** 345677654322
**(d)** 346577564322

**Q107.** The greatest four digit number which is exactly divisible by 12, 15, 20 and 54 is:
**(a)** 9990
**(b)** 9346
**(c)** 9828
**(d)** 9720

**Q108.** If PLANT is coded as SODQW, then MOUNTAIN will be coded as:
**(a)** OQWPVCKP
**(b)** PRXQWDLQ
**(c)** OKWQVDLQ
**(d)** JKRKQXFK

**Q109.** If the cost price of 18 pens is equal to the selling price of 12 pens, what is the gain percent?
**(a)** 12.5%
**(b)** 22.5%
**(c)** 50%
**(d)** 36%

**Q110.** The topmost skin layer that is exposed in a human body, is called
**(a)** Sclera
**(b)** Endodermis
**(c)** Epidermis
**(d)** Hypodermis

**Q111.** Which of the following is the highest peak of Southern India?
**(a)** Doddabetta
**(b)** Mullayanagiri
**(c)** Kalsubai
**(d)** Anaimudi Peak

**Q112.** Which of the following is the correct descending order for the given fractions?
**(a)** 7/9, 11/47, 5/13, 24/29
**(b)** 24/29, 11/47, 7/9, 5/13
**(c)** 11/47, 5/13, 7/9, 24/29
**(d)** 24/29, 7/9, 5/13, 11/47

**Q113.** What is the median of the following distribution?
67, 31, 53, 22, 66, 8, 43, 54, 77, 13, 43, 97, 36, 12, 90, 53
**(a)** 53
**(b)** 56.5

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**(c)** 48
**(d)** 54.5

**Q114.** Which of the following Indian Squash players scripted history by winning the first Gold for India in Squash at the Commonwealth Games 2014?
**(a)** Aparajitha Balamurukan, Joshna Chinappa
**(b)** Saurav Ghosal, Sandeep Jangra
**(c)** Dipika Allikal, Joshna Chinappa
**(d)** Anaka Alankamony, Anwesha, Reddy

**Q115.** What is the minimum resistance that can be obtained using four resistors of 5 Ohm each?
**(a)** 1.5 Ohm
**(b)** 0.8 Ohm
**(c)** 20 Ohm
**(d)** 1.25 Ohm

**Q116.** You are given a question followed by two statements numbered I and II. You have to decide whether the data provided on the statements are sufficient to answer the question.
What is the value of 'x'?
Statements :
I. $x + 2y = 6$
II. $3x + 6y = 18$
**(a)** Statement I alone is sufficient
**(b)** Both statements I and II together are not sufficient
**(c)** Both statements I and II together are necessary
**(d)** Statement II alone is sufficient

**Q117.** At 13 years, 4 months and 22 days, who became India's youngest Chess Grandmaster?
**(a)** Pendyala Harikrishna
**(b)** Humpy Koneru
**(c)** Viswanathan Anand
**(d)** Parimarjan Negi

**Q118.** The National Emblem of India is an adaptation of the Lion Capital built by which emperor?
**(a)** Ashoka
**(b)** Akbar
**(c)** Chandragupta
**(d)** Ajatasatru

**Q119.** Name the physiologist who won the Nobel Prize in 2010 for invention of in-vitro fertilization technology?
**(a)** James Wastson
**(b)** Robert Edwards
**(c)** Louise Brown
**(d)** Joshua Lederberg

**Q120.** What is the maximum number of members from the Union Territories in the Lok Sabha (as envisaged in the Constitution of India)?
**(a)** 20
**(b)** 19
**(c)** 22
**(d)** 21

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## ANSWER KEY

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | b | 2 | c | 3 | c | 4 | c | 5 | a | 6 | d | 7 | d | 8 | b | 9 | b | 10 | c |
| 11 | a | 12 | d | 13 | a | 14 | d | 15 | a | 16 | d | 17 | a | 18 | c | 19 | c | 20 | b |
| 21 | c | 22 | b | 23 | c | 24 | c | 25 | d | 26 | c | 27 | b | 28 | c | 29 | d | 30 | d |
| 31 | c | 32 | a | 33 | d | 34 | b | 35 | d | 36 | c | 37 | c | 38 | a | 39 | b | 40 | d |
| 41 | b | 42 | a | 43 | b | 44 | d | 45 | d | 46 | d | 47 | a | 48 | a | 49 | d | 50 | c |
| 51 | c | 52 | a | 53 | c | 54 | b | 55 | b | 56 | d | 57 | a | 58 | a | 59 | d | 60 | c |
| 61 | d | 62 | b | 63 | d | 64 | c | 65 | d | 66 | b | 67 | b | 68 | d | 69 | a | 70 | b |
| 71 | c | 72 | d | 73 | b | 74 | d | 75 | d | 76 | c | 77 | a | 78 | c | 79 | c | 80 | d |
| 81 | d | 82 | b | 83 | b | 84 | a | 85 | c | 86 | d | 87 | b | 88 | d | 89 | c | 90 | a |
| 91 | d | 92 | a | 93 | b | 94 | b | 95 | d | 96 | c | 97 | d | 98 | a | 99 | b | 100 | b |
| 101 | d | 102 | c | 103 | b | 104 | b | 105 | d | 106 | c | 107 | d | 108 | b | 109 | c | 110 | c |
| 111 | d | 112 | d | 113 | c | 114 | c | 115 | d | 116 | b | 117 | d | 118 | a | 119 | b | 120 | a |

## SOLUTIONS

**Q1. Answer: (b) 0.99%**

Given:

Appeared students

Maharashtra = 8500, Uttar Pradesh = 5600, Kerala = 7500, Delhi = 4800, Arunachal Pradesh = 7000

Selected Students

Maharashtra = 80, Uttar Pradesh = 85, Kerala = 48, Delhi = 48, Arunachal Pradesh = 70

Formula used:

Percentage = selected students/appeared students × 100

Calculation:

Appeared students

=> 8500 + 5600 + 7500 + 4800 + 7000

=> 33400

Selected students

=> 80 + 85 + 48 + 48 +70

=> 331

=> selected students% = 331/33400 × 100

=> 0.99%

Therefore Required percentage of students who appeared in the exam were selected = 0.99%

**Q2. Answer: (c) Uttar Pradesh**

Given:

Selected students

Maharashtra = 80, Uttar Pradesh = 85, Delhi = 48, Kerala = 48

Qualified students

Maharashtra = 950, Uttar Pradesh = 620, Delhi = 400, Kerala = 720

Formula used:

ratio = selected students/qualified students

Calculation:

Maharashtra = 80/950 = 0.084

Uttar Pradesh = 85/620 = 0.137

Delhi = 48/400 = 0.12

Kerala = 48/720 = 0.066

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Clearly, we can see Uttar Pradesh has the highest ratio of number of students selected to the national level exam who qualified from that State

**Q3. Answer: (c) Delhi**

Given:

Appeared students

Maharashtra = 8500, Kerala = 7500, Delhi = 4800, Arunachal Pradesh = 7000

Qualified Students

Maharashtra = 950, Kerala = 720, Delhi = 400, Arunachal Pradesh = 650

Formula used:

Percentage = qualified students/appeared students × 100

Calculation:

Maharashtra = 950/8500 × 100 = 11.2%

Kerala = 720/7500 × 100 = 9.6%

Delhi = 400/4800 × 100 = 8.33%

Arunachal Pradesh = 650/7000 × 100 = 9.28%

Clrealy, we can compare

Maharashtra > Kerala > Arunachal pradesh > Delhi

Therefore Delhi has the lowest percentage of qualifications over those who had appeared

**Q4. Answer: (c) Uttar Pradesh**

Given:

Selected students

Maharashtra = 80, Uttar Pradesh = 85, Delhi = 48, Kerala = 48

Appeared students

Maharashtra = 8500, Uttar Pradesh = 5600, Delhi = 4800, Kerala = 7500

Formula used:

ratio = selected students/appeared students

Calculation:

Maharashtra = 80/8500 = 0.0094

Uttar Pradesh = 85/5600 = 0.015

Delhi = 48/4800 = 0.010

Kerala = 48/7500 = 0.0064

Clearly, here we can compare

Uttar Pradesh > Delhi > Maharashtra > Kerala

Therefore Uttar Pradesh has the highest ratio of number of students selected to the number of students who appeared from that State

**Q5. Answer: (a) 50.4 Crore Jan Dhan Accounts were opened**

The correct answer is 50.4 Crore Jan Dhan Accounts were opened.

Important Points

• JAM (short for Jan Dhan-Aadhaar-Mobile) trinity is the initiative by the Government of India to link Jan Dhan accounts, Mobile numbers, and Aadhar cards of Indians.

• It helps to directly transfer subsidies to intended beneficiaries and eliminate intermediaries and leakages.

• The JAM trinity was first proposed in the Economic Survey 2014-15. Finance Minister, Arun Jaitley.

• The database of 1.2 billion bank accounts, when linked with 900 million mobile phones and about 1 billion Aadhaar numbers.

• JAM facts:

• Guinness World Record for most bank accounts opened in one week -1,80,96,130.

• 19.72 crore bank accounts opened.

• 16.8 crore RuPay cards issued.

• 28k crore Cash Deposits.

• 131 crore Overdraft.

Key Points

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• Government schemes under JAM:

• Pratyaksh Hanstantarit Labh (PAHAL) Yojna: Under PAHAL Yojna, LPG subsidies are directly deposited into the bank accounts.

• Pradhan Mantri Suraksha Bima Yojna: Under this scheme, accident insurance worth Rs. 2 Lakh is being provided.

• Pradhan Mantri Jeevan Jyoti Bima Yojna: This scheme provides life insurance at just Rs. 330 per year payable to the family of the member in case of his death due to any reason.

• Atal Pension Yojana: It provides a pension of up to Rs. 5000 a month depending on the contribution.

**Q6. Answer: (d) 26.67%**

Given:

Total runs = 150

No. of fours = 20

No. of sixes = 5

Formula used:

percentage = remaining run/total run × 100

Calculation:

Total run = 150

=> Run scored by fours = 20 × 4 = 80

=> Run scored by sixes = 5 × 6 = 30

=> Remaining run = 150 - (80 + 30) = 40

=> Percentage = 40/150 × 100

Therefore Required percentage of runs he scored by running between the wickets = 26.67%

**Q7. Answer: (d) Ion Iliescu**

The correct answer is Ion Iliescu.

Key Points

• Romania's former President Ion Iliescu has been charged with crimes against humanity for his role in the aftermath of the violent revolt that toppled the communist regime in 1989.

• A former president has appeared before Romania’s top court, which is prosecuting him for crimes against humanity during a bloody anti-government protest 25 years ago where six died and hundreds were injured.

• Ion Iliescu, 85, went to the High Court of Cassation to hear charges connected to the violent repression of the June 1990 protest.

Additional Information

• John William Ashe was an Antiguan diplomat and politician. He was the President of the United Nations General Assembly at its 68th session, which ran from September 2013 to September 2014. He was also President of the UNICEF Executive Board in 2012.

• Khaled Mahfoudh Bahah is a Yemeni politician and diplomat who served as Prime Minister of Yemen between 2014 and 2016, as well as Vice President of Yemen from 2015 until he was sacked on April 3, 2016, by the President of Yemen Abdrabbuh Mansur Hadi.

• Richard Frederick Heck was an American chemist noted for the discovery and development of the Heck reaction, which uses palladium to catalyze organic chemical reactions that couple aryl halides with alkenes. The analgesic naproxen is an example of a compound that is prepared industrially using the Heck reaction

**Q8. Answer: (b) PERIMETER**

The way CIRCUMFERENCE is related to CIRCLE

similarly

PERIMETER is related to SQUARE

Hence ,PERIMETER is the correct answer.

**Q9. Answer: (b) Scala**

The correct answer is Scala.

• Scala is a type-safe JVM programming language that incorporates both object-oriented and functional programming.

• It is used for general software applications.

• It was firstly introduced in 2003.

Important Points

• An operating system or "OS" is software that communicates with the hardware and allows other programs to run.

• It is comprised of the system software, or the fundamental files your computer needs to boot up and function.

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• Common desktop operating systems include Windows, Unix, DOS, Linux and Android is a mobile operating system.

**Q10. Answer: (c) 32%**

Given:

April to May - 10% increase

May to June - 20% decrease

June to July - 50% increase

Formula used:

Percentage increase = increased value/original value × 100

Calculation:

Let the number = 1000x

April to May 10% increase

=> number = 1000x × 110/100 = 1100x

May to June 20% decrease

=> number = 1100x × 80/100 = 880x

June to July 50% increase

=> number = 880x × 150/100 = 1320x

=> increased value = 1320x - 1000x = 320x

=> % increase = 320x/1000x × 100

Therefore Required percentage increase from April to July = 32%

**Q11. Answer: (a) West Indies**

The correct answer is West Indies.

Important Points

• ICC Women's World T20 2016 was won by West Indies after they beat Australia by 8 wickets in the final of the tournament.

• It was hosted by India and ten nations qualified for the same – Australia, England, West Indies, South Africa, India, New Zealand, Pakistan, Sri Lanka, Ireland, and Bangladesh.

• Stafanie Taylor (West Indies captain), was the Player of the Tournament.

Additional Information

• Australia won the ICC Women's Trophy 2020.

**Q12. Answer: (d) 7 : 8**

Given:

Two numbers are respectively 40% and 60% more than a third number.

Calculation:

Let the third number be 'x'.

The first number is 40% more than the third number

=> first number = x × 140/100

=> first number = 7x/5

The second number is 60% more than the third number

=> second number = x × 160/100

=> second number = 8x/5

=> first number: second number = 7x/5 : 8x/5

Therefore Ratio of first number to the second number = 7 : 8

**Q13. Answer: (a) 20**

The logic follows here is

6 - 2 = 4

12 - 6 = 6

20 - 12 = 8

30 - 20 = 10

42 - 30 = 12

56 - 42 = 14

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Here we can see the difference is increasing by 2.

Hence 20 is the correct answer.

**Q14. Answer: (d) Both statements I and II together are necessary**

I. In the code language, 'you are beautiful' is written as 'sen tou ki' → Sen could be "You" or "are' or " beautiful", so can't determine from this statement.

II. In the same code language, 'will you have coffee' is written as 'ti sen ae toce' → Sen could be 'will" " you " "have " " coffee ", so can't determine from this statement

Now, combining both the statements we can say " you " is common in both, so," You" is the code for " Sen "

Hence, Both statements I and II together are necessary.

**Q15. Answer: (a) 1/20**

Given:

12/5, 21/6, 9/4 and 18/3

Formula used:

HCF of fractions = HCF of numerators/LCM of denominators

Calculation:

HCF of fractions = HCF of numerators/LCM of denominators

=> HCF of fractions = HCF of (12, 21, 9, 18)/LCM of (5, 6, 4, 3)

=> Since, 12 = 2 × 2 × 3, 21 = 3 × 7, 9 = 3 × 3, 18 = 2 × 3 × 3

=> HCF of 12, 21, 9, 18 = 3

=> 5 = 1 × 5, 6 = 2 × 3, 4 = 2 × 2, 3 = 1 × 3

=> LCM of 5, 6, 4, 3 = 60

=> HCF of (12, 21, 9, 18)/LCM of (5, 6, 4, 3) = 3/60

Therefore HCF of 12/5, 21/6, 9/4 and 18/3 = 1/20

**Q16. Answer: (d) 25**

Given

The ratio of boys to girls is 4 : 5, four new boys joined the class, the number of boys would increase by 20%

Calculation:

=> Let Number of boys = 4x and number of girls = 5x

=> Let assume 4x boys = 100%

also, 4x + 4 = 4x × 120/100

=> 4x + 4 = 4.8x

=> 0.8x = 4

=> x = 5

Therefore number of girls = 5x = 5 × 5 = 25

**Q17. Answer: (a) Calcium Carbonate**

The correct answer is Calcium Carbonate.

Key Points

• Calcium Carbonate is the carbonic salt of calcium (CaCO3).

• Calcium Carbonate (also known as chalk), mined as calcite, is the most commonly used filler for PVC.

• Calcium Carbonate is insoluble in water because the electrostatic bonds between the carbonate anion and the calcium ion are too strong to be overcome by solvation by water molecules.

Important Points

| | |
|---|---|
| **Sodium Chloride (NaCl)** | **• It is the chemical name for salt. - Sodium is an electrolyte that regulates the amount of water in your body. - Soluble in: Water, Ammonia, Methanol, Glycerol, Formic acid, Propylene glycol, Formamide.** |
| Lithium Bromide (LiBr) | • It is a lithium salt in which the counterion is bromide. - The anhydrous salt forms cubic crystals are similar to common salt. - It is soluble in water, alcohol, and ether. - It is prepared by the action of hydrobromic acid on lithium hydroxide. |

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| | |
|---|---|
| Magnesium Iodide (MgI2) | • It is typical ionic halides, being highly soluble in water. |

**Q18. Answer: (c) Compiler**

The correct answer is Compiler.

• A compiler takes the program code (source code) and converts the source code to a machine language module (called an object file) at one go.

• An Interpreter executes the source program statement by statement

Important Points

| **Scanner** | **A scanner is an input device that captures images from photographic prints, posters, magazine pages, and similar sources for computer editing and display.** |
|---|---|
| Plotter | A plotter is a computer output hardware device much like a printer that is used for printing vector graphics or drawings on paper with multiple pens. |
| VDU (Video Display Unit) | It displays (output devices) images generated by a computer or other electronic device. The term VDU is often used synonymously with "monitor" more like to digital projector. |

**Q19. Answer: (c) 30 days**

Given:

X and Y can complete a piece of work in 15 days, and X alone can do the same work in 30 days

Calculation:

=> X and Y can complete a piece of work in 15 days

Therefore One day work of X and Y combined = 1/15 unit

=> X alone can do the same work in 30 days

Therefore One day work of X = 1/30 unit

One day work,

=> 1/15 = 1/30 + 1/Y

=> 1/Y = 1/15 - 1/30

=> 1/Y = (2 - 1)/30 = 1/30

=> Y = 30

Therefore Y alone takes 30 days to complete the same work

Given

=> X and Y can complete a piece of work in 15 days

=> X alone can do the same work in 30 days

=> By using direct l.c.m method

=> Efficiency of X and Y = 30/15 = 2 unit per day.

=> Efficiency of X = 30/30= 1 unit per day

Therefore Efficiency of y = Efficiency of whole - Efficiency = 2 - 1 = 1

=> Y working = Total work/Y efficiency = 30/1 = 30 days.

Therefore Y alone takes 30 days to complete the same work

**Q20. Answer: (b) Sulphuric acid**

The correct answer is Sulphuric acid.

Important Points

• The stomach plays a critical role in the early stages of food digestion.

• Gastric juice comprises water, mucus, hydrochloric acid, pepsin, and intrinsic factor.

• Pepsin is the principal enzyme involved in protein digestion.

• It breaks down proteins into smaller peptides and amino acids that can be easily absorbed in the small intestine.

• Hydrochloric acid (HCl), another component of the gastric juice.

• It is creating the pH required for pepsin activity. Parietal cells produce HCl by secreting hydrogen and chloride ions.

• Potassium (K^+) ions are critical for the activation and catalytic cycle of the gastric H^+, K^+-ATPase, resulting in the secretion of

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hydrochloric acid into the parietal cell canaliculus.

**Q21. Answer: (c) 12 cm**

Given

=>

Here the triangle is an equilateral triangle, hence all sides are equal.

Formula Used:

Perimeter of equilateral triangle = 3 × side (Because all sides are equal)

Calculation:

=> 24 = 3 × side

=> Side = 24/3 = 8 cm

=> As X, Y, Z are the midpoint of triangle PQR

therefore PR = 8 cm, PZ = 4 cm, ZR = 4 cm, RQ = 8 cm, QY = 4 cm, YR = 4 cm PQ = 8 cm, PX = 4cm, QX = 4cm.

=> Using The midpoint theorem “The line segment in a triangle joining the midpoint of two sides of the triangle is said to be parallel to its third side and is also half of the length of the third side.”

Therefore XY = YZ = ZX = 4cm

Therefore Perimeter of triangle XYZ = 4 + 4 + 4 = 12 cm

**Q22. Answer: (b) Rs. 1986**

Given:

There is a 40% increase in an amount in 4 years at simple interest.

Formula Used:

S.I = (P × R × t )/100

A = P × (1 + r/100 )t ;C.I = (A - P)

Calculation:

Let sum is Rs. 100x

Therefore 40% of 100 = (40/100) × 100 = 40x

Therefore Increased amount = 40x

=> So simple interest is 40x

Now,

=> Using above formula,

=> 40x = (100x × R × 4)/100

=> 40 × 100 = 100 × R × 4

=> 4000/100 = R × 4

=> R = 40/4 = 10%

Now on same rate compound interest on 6000 Rs. for time period 3 years

=> A = P × (1 + r/100)^t

=> P = 6000, R = 10%, T = 3 years

=> A = 6000 × (1 + 10/100)³

=> A = 6000 × (11/10)³

=> A = 6000 × (1331/1000) = 6 × 1331 = 7986

=> A = 7986

now

=> A = C.I + P, Therefore C.I = (A - P)

=> C.I = 7986 - 6000 = Rs. 1986

Therefore Compound interest on Rs. 6000 at 10% interest rate is Rs. 1986

**Q23. Answer: (c) 4th**

The correct answer is 4th.

• World Resources Institute (WRI) shows India as the 4th biggest emitter in greenhouse gas emissions.

• India is followed by China, Mexico, and Brazil.

Important Points

• Gases that trap heat in the atmosphere are called greenhouse gases.

• They let sunlight pass through the atmosphere, but they prevent the heat that the sunlight brings from leaving the atmosphere.

• The main gas of greenhouse gases is carbon dioxide (CO2).

• The other gases of greenhouse gases are methane (CH4), Nitrous oxide (N2O), Fluorinated gases, ozone (O3), water vapor (H2O).

• Fluorinated gases like hydrofluorocarbons, perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride are synthetic, powerful greenhouse gases that are emitted from a variety of industrial processes.

Additional Information

• Greenhouse gases absorb infrared radiation (net heat energy) emitted from Earth's surface and reradiating it back to Earth's surface.

• In 1997, The Kyoto Protocol is an international treaty of the United Nations Framework Convention on Climate Change (UNFCCC) that commits state parties to reduce greenhouse gas emissions.

**Q24. Answer: (c) Daughter-in-law**

According to the given information,

Possible tree diagram will be,

Hence, the correct answer is Daughter-in-law.

**Q25. Answer: (d) Mahindra & Mahindra**

The correct answer is Mahindra & Mahindra.

• Mahindra became the first Indian company to join the EP100 campaign on 22 April 2016.

• By signing this campaign, the company committed to double its energy productivity by 2030.

• Mahindra Group's chairman is Anand Mahindra.

Additional Information

• Vipin Sondhi Is New Chief Executive Officer and Managing Director Of Ashok Leyland.

• Hinduja Group flagship Ashok Leyland Ltd.

• Venu Srinivasan, Chairman of the TVS Motor Company.

• Guenter Karl Butschek is the current CEO and Managing Director of Tata Motors Worldwide.

• In India Tata Motors chairman is N Chandrasekaran.

**Q26. Answer: (c) 39**

he logic follows here is:-

4 × 2 +1= 9,

9 × 2 + 1 = 19,

19 × 2 + 1 = 39,

79 × 2 + 1= 159,

So, all the numbers are multiplying by 2 first and then adding by 1

Hence, 39 is the correct answer.

**Q27. Answer: (b) Hubble**

The correct answer is Hubble.

• Hubble telescope launched on April 24, 1990.

• Hubble is currently located about 340 miles (547 km) above Earth's surface.

• It completes 15 orbits per day — approximately one every 95 minutes.

• Hubble's orbit is inclined to the equator at 28.5 degrees.

• Edwin Hubble was an American astronomer.

• He is famous for the Hubble Space Telescope.

• In 1920, he discovered countless galaxies that exist beyond our own Milky Way galaxy revolutionized our understanding of the universe and earth place within it.

Important Points

| | |
|---|---|
| **Chandra** | **• NASA's Chandra X-ray Observatory is a telescope specially designed to detect X-ray emission from very hot regions of the Universe. - It was launched on 23 July 1999.** |

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| | |
|---|---|
| James Webb | • James Webb Space Telescope is scheduled for launch in 2021. - It is optimized for infrared wavelengths. - The James Webb Space Telescope is the successor to the Hubble. |
| Spitzer | • It was launched on Aug 25, 2003. - It is formerly known as the Space Infrared Telescope Facility. - It is an infrared telescope that studies the early universe, young galaxies, and forming stars, and is used to detect dust disks around stars, considered an important signpost of planetary formation. |

**Q28. Answer: (c) Tajikistan**

The correct answer is Tajikistan.

Important Points

• India shares borders with 10 countries:

• In the north or north-west: China, Bhutan, Nepal, Pakistan, Afghanistan.

• In the east: Bangladesh, Myanmar.

• Water borders: Sri Lanka, Maldives, Indonesia.

Additional Information

• Uttar Pradesh comes in fourth place in terms of area, and the maximum number of border sharing states.

• This state shares its borders with 9 states/Union Territories, and an international border with Nepal.

• The sharing states are Uttarakhand, Himachal Pradesh, Haryana, Delhi, Rajasthan, Madhya Pradesh, Chhattisgarh, Jharkhand, and Bihar.

**Q29. Answer: (d) Actress**

The correct answer is Actress.

Important Points

• The veteran actress Sadhana Shivdasani passed away on 25th Dec 2015.

• Sadhana Shivdasani was known for films like Love in Simla, Parakh, Hum Dono, Waqt, Woh Kaun Thi.

• She got IIFA Lifetime Achievement Award in 2002.

**Q30. Answer: (d) Chalk**

we can write on "Blackboard", Paper and Slate

But

we can write by "Chalk" only.

Hence, "Chalk" is the correct answer.

**Q31. Answer: (c) Microscope**

The correct answer is Microscope.

• A convex lens is also known as a converging lens.

• A converging lens is a lens that converges rays of light that are travelling parallel to its principal axis.

• They can be identified by their shape which is relatively thick across the middle and thin at the upper and lower edges.

• Convex lenses are used in eyeglasses for correcting farsightedness.

• Some examples of the convex lens are The human eye, camera, telescope, microscope, etc.

• Microscope converges the light rays to a single point i.e. focal point and helps us to see the objects very clearly

Important Points

• A concave lens is a lens that possesses at least one surface that curves inwards.

• It is a diverging lens, meaning that it spreads out light rays that have been refracted through it.

• A concave lens is thinner at its center than at its edges.

• A concave lens is used to correct short-sightedness (myopia).

• Some examples of the concave lens are flashlights, laser, telescopes, binocular, car headlights, etc.

**Q32. Answer: (a) 100 km**

Given:

Anita walks a certain distance at 13 km/hr, i.e distance is fixed and covered 30 km extra distance

Anita actual speed was 10 km/hr

Formula Used:

speed = Distance/Time

Calculation:

Let the actual distance travelled by her be 'd' km

=> d/10 = (d + 30)/13

=> 13d = 10d + 300

=> 3d = 300

=> d = 100 km

Therefore Actual distance covered by Anita is 100 km

**Q33. Answer: (d) Pallavas**

The correct answer is Pallavas.

• This group of sanctuaries, founded by the Pallava kings, was carved out of rock along the Coromandel coast in the 7th and 8th centuries.

• It is known especially for its rathas (temples in the form of chariots), mandapas (cave sanctuaries).

• The city of Mahabalipuram was founded by the Pallava king Narasimhavarman I.

• It has 40 ancient monuments and Hindu temples, including one of the largest open-air rock reliefs in the world: the Descent of the Ganges or Arjuna's Penance.

Important Points

• Brihadisvara Temple at Thanjavur was built during the reign of the Chola emperor Rajaraja and designed by the famous architect Sama Varma between 1003 and 1010 AD.

• Tiruvalisvaram Temple at Brahmadesam, Uttarakailash temple at Tiruvadi, Rajarajeshwar temple at Tanjore, Airavatesvara Temple at Darasuram were built by Chola emperor Rajaraja II and the temple is dedicated to Lord Shiva.

• Some famous temple and monuments built during the period of Chalukyas:

• Badami cave Temples, Karnataka.

• Virupaksha Temple at Pattadakal.

• Ravana Phadi Cave, Aihole.

• Sangameshvara Temple, Pattadakal.

**Q34. Answer: (b) 300 m**

Given:

Train running at 120 km/hr and crosses a pole in 9 seconds

Formula Used:

speed of train = distance/time

Distance = length of train

Speed of the train is given in km/h while time is given in seconds so first we need to convert speed into m/s because length has been asked in m

To convert speed km/h into m/s multiply given speed with 5/18 and

to convert speed m/s to km/h multiply given speed with 18/5

Calculation:

=> Speed in m/s = 120 km/hr × (5/18) = (100/3) m/s

=> Distance = (100/3) × 9 = 300 m

Therefore Length of train = 300 m

**Q35. Answer: (d) 80 km/hr**

Given:

The ratio between the speeds of two trains is 4 : 5 and the second train runs 800 km in 8 hours.

Formula Used:

speed = distance/time

Calculation:

Let the speed of two trains be 4x and 5x respectively

=> Speed of second train = 5x = 800/8

=> 5x = 100 km/hr

=> x = 20 km/hr

=> speed of first train = 4x = 20 × 4 = 80 km/h

Therefore The speed of the first train = 80 km/h

**Q36. Answer: (c) Sacrifice**

The correct answer is Sacrifice.

• The Yajur Veda is an ancient collection of Sanskrit mantras and verses, used in Hindu worship and rituals.

• The name was taken from the Sanskrit roots, yajur, meaning "worship" or "sacrifice" and Veda, meaning "knowledge".

• Yajur Veda is sometimes translated as "Knowledge of the Sacrifice".

Important Points

• Yajur Veda is one of the four primary scriptures of Hinduism known collectively as the Vedas.

• The other three are Rig Veda, Atharva Veda, and Sama Veda.

• Each of the four Vedas is assigned a specific Hindu priest.

• Hota for Rig Veda, Adhvaryu for Yajur Veda, udgata for Sama Veda and brahman for Atharva Veda.

• "Rig Veda" is the oldest of the Vedas, and one of the oldest extant texts in any Indo-European language.

• The "Rig Veda" outlines one of the most ancient forms of yoga, and provides information about the practice of yoga and other spiritual disciplines.

• "Sama Veda" should not be read or recited, but sung.

• It is also called the "Book of Song".

• The "Atharva Veda" is dedicated to prolonging life and healing illnesses, seeking cures from herbs, gaining a lover or partner, or world peace and the nature of good and evil.

Key Points

• The Vedas are the oldest Hindu sacred texts.

• The Sanskrit word, Veda, means "knowledge".

• The Vedas are also referred to by some as sruti literature, meaning “what is heard”.

**Q37. Answer: (c) LIRA**

The way “DOLLAR ” is the currency of “USA ”

Similar,

“LIRA" is the currency of “TURKEY”.

Hence, the correct answer is LIRA.

**Q38. Answer: (a) A. P. J. Abdul Kalam**

The correct answer is A. P. J. Abdul Kalam.

• Transcendence: My Spiritual Experiences with Pramukh Swamiji (June 2015) is a book written by A. P. J. Abdul Kalam.

• He was born at Rameswaram, Tamil Nadu.

• He served as the 11th President of India from 2002 to 2007.

• Kalam was known as the ‘Missile Man’ of India due to his continued, successful work with ballistic missiles and launch vehicle technology.

• He was the Project Director of India’s first satellite Rohini.

• He was the chief of the Integrated Guided Missile Development Program and developed 5 missiles: Nag, Akash, Trishul, Agni, Prithvi.

• Kalam also made significant contributions to the nuclear capabilities of India.

• The Pokhran -2 nuclear tests (in 1998) were successful thanks to his organizational and technical support.

• He passed away due to an unfortunate cardiac arrest minutes after delivering a lecture at the Indian Institute of Management Shillong on July 27, 2015.

Important Points

• Mamata Banerjee is the current CM of West Bengal.

• Her party is the All India Trinamool Congress.

• Her books are My Unforgettable Memories, Paribartana, Upalabdhi, Struggle For Existence, etc.

• Atal Bihari Vajpayee was the former PM of India (1998–2004).

• Vajpayee was the first Indian politician to deliver a speech in Hindi at the United Nations General Assembly.

• During his tenure as PM, India conducted a successful nuclear test at Pokhran, Rajasthan, named Operation Shakti.

• Vajpayee was a close follower of Shyama Prasad Mukherjee, founder of the Bharatiya Jana Sangh.

• Books and Poetries of Atal Bihari Vajpayee are National Integration, Kucha Lekha, Kucha Bhashana, Rajaniti ki Rapatili Rahem,

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Meri Ikyavana Kavitaem, Nayi Disha, Twenty-One Poems, etc.

• Pranab Mukherjee served as the 13th President of India from 2012 until 2017.

• Foreign Honours received by him:

• Bangladesh Muktijuddho Sanmanona - Bangladesh Liberation War Honour (March 2013).

• Cross of National Order of the Ivory Coast - highest state order of knighthood of the Ivory Coast (June 2016).

• Grand Collar of the Order of Makarios II - The highest order of Merit awarded by Cyprus.

• Books written by him are The Coalition Years, The Turbulent Years: 1980 - 1996, Thoughts and Reflections, Challenges Before the Nation/Saga of Struggle and Sacrifice, Beyond survival, The Dramatic Decade: The Indira Gandhi Years, etc.

**Q39. Answer: (b) 44.5%**

Given:

In a village of 200 persons, 111 are literate.

Formula Used:

Number of illiterate person = Total person in village - Number of literate person

Percentage of illiterate person = (Number of illiterate person/Total person in village) × 100

Calculation

=> Total person in village = 200

=> Number of literate person = 111

=> Number of illiterate person = 200 - 111 = 89

=> Percentage of illiterate person = (89/200) × 100 = 89/2 = 44.5%

Therefore required Percentage of the illiterate person in village = 44.5%

**Q40. Answer: (d) Article 21A**

The correct answer is Article 21A.

Key Points

• Right to Education Act (RTE) provided free and compulsory education to children and enforced it as a fundamental right under Article 21-A. It aims to provide primary education to all children aged 6 to 14 years.

• The first official document on the Right to Education was Ramamurti Committee Report in 1990.

• Tapas Majumdar Committee (1999) was set up, which encompassed the insertion of Article 21A.

• The 86th amendment to the constitution of India in 2002, provided the Right to Education as a fundamental right in part-III of the Constitution.

Important Points

| | |
|---|---|
| **Article 12** | **• The State includes the Government and Parliament of India and the Government and the Legislature of each of the States and all local or other authorities within the territory of India or under the control of the Government of India.** |
| Article 5 | • Citizenship at the commencement of the Constitution. - “every person” who has a domicile in the territory of India and Who has been ordinarily resident in the territory of India for not less than 5 years immediately preceding such commencement shall be a citizen of India. |
| Article 23 | • Prohibition of traffic in human beings and forced labor. - Everyone has the right to work, to free choice of employment, to just and favorable conditions of work, and to protection against unemployment. - Everyone, without any discrimination, has the right to equal pay for equal work. |

**Q41. Answer: (b) Rs. 120**

Given:

Pankaj buys 10 lemons for Rs. 80 and he wants to make a profit of 25% on selling a dozen of lemons

Concept Used:

Selling Price (SP) = Cost Price (CP) + Profit

one dozen means12 in quantity

Calculation:

Pankaj buys 10 lemons for Rs. 80

The cost price (CP) per lemon = 80/10

=> Rs. 8

The cost price of one dozen lemon = 8 × Rs. 12

=> Rs. 96

25% profit on Rs. 96 = (25/100) × 96 = Rs. 24

Therefore Selling price = 96 + 24 = Rs. 120

**Q42. Answer: (a) 500 km**

Given:

Richard's car runs 25 km in one litre of petrol

Petrol costs Rs. 75/litre

Richard spends Rs.1500 on petrol

Concept Used:

Concept of Unitary Method.

In this concept we will first calculate the value of a single unit then we will calculate our desire value by multiplying the single unit value

Total distance travel = Distance travel/fuel consumed × Total fuel

Calculation:

Total money spend = Rs. 1500

Price of petrol = Rs. 75/liter

He can buy total 1500/75 = 20 litre petrol on that money

Now, in 1 litre petrol car runs 25 km

Therefore In 20 liter petrol car runs = 20 × 25 = 500 km

Therefore Richard’s car can go 500 km on Rs. 1500 of petrol

**Q43. Answer: (b) 29.00 km**

Given:

Binary starts walking South. After 21 km, he turns to his right and walks straight for 20 km.

Concept Used:

Concept of detection

Concept of Pythagoras formula: In a Right-angle triangle if ‘a’ be the length of the base and ‘b’ be the length of the height of the perpendicular and ‘c’ be the length of hypotenuses then,

$a^2 + b^2 = c^2$

Calculation:

Binary starts walking South. After 21 km, he turns to his right i.e. from the figure AB = 21 km

Then after turns to his right and walks straight for 20 km i.e. from figure BC = 20 km

Now, angle ABC = 90°

From Pythagoras formula get,

$(AC)^2 = (AB)^2 + (BC)^2$

$\Rightarrow (AC)^2 = (21)^2 + (20)^2$

$\Rightarrow (AC)^2 = 441 + 400$

$\Rightarrow (AC)^2 = 841$

$\Rightarrow AC = \sqrt{841}$

$\Rightarrow AC = 29$

Therefore He is 29 km far from his starting position.

**Q44. Answer: (d) Cost Price = 70, Profit = 40**

According to the 1st option profit % = 32/60 ×100 = 53.33%

According to the 2nd option profit % = 44/80 × 100 = 55%

According to the 3rd option profit % = 26/50 × 100 = 52%

According to the 4th option profit % = 40/70 × 100 = 57.14%

So, the last option is the best in terms of profit percentage.

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**Q45. Answer: (d) Brother-in-law**

Family Chart:-

Family Tree according to the statement:-

Hence, "brother in law" is the correct answer.

**Q46. Answer: (d) Sahil, Anil**

Eight friends - Rita, Priya, Sita, Aarti, Sahil, Sameer, Biswas, and Anil-are sitting around a circular table facing each other .Rita's husband is sitting directly across the table from her. Sameer is to the immediate left of Anil and third to the right of Rita (so, Anil is the husband of Rita). Aarti is sitting to the immediate right of Rita.

combining the statements we can draw a circle like bellow

Priya's husband, and her best friend, Rita are sitting on her either side(the only possible place for Priya is to the immediate left of Rita, as priya is sitting between Rita and Priya's Husband). Rita is sitting to the left of Sameer's wife.

Aarti and Sahil are the only two unmarried people in the group. Sameer can't be priya's husband(from the diagram as sammer's place is already fixed), so, Biswas will be Priya's husband and Sita will be Sammer's wife. The final sitting arrangement will be

Hence, "Sahil, Anil" is the correct answer,

**Q47. Answer: (a) Anil**

Eight friends - Rita, Priya, Sita, Aarti, Sahil, Sameer, Biswas, and Anil-are sitting around a circular table facing each other .Rita's husband is sitting directly across the table from her. Sameer is to the immediate left of Anil and third to the right of Rita (so, Anil is the husband of Rita). Aarti is sitting to the immediate right of Rita.

combining the statements we can draw a circle like bellow

Priya's husband, and her best friend, Rita are sitting on her either side(the only possible place for Priya is to the immediate left of Rita, as priya is sitting between Rita and Priya's Husband). Rita is sitting to the left of Sameer's wife.

Aarti and Sahil are the only two unmarried people in the group. Sameer can't be priya's husband(from the diagram as sammer's place is already fixed), so, Biswas will be Priya's husband and Sita will be Sammer's wife. The final sitting arrangement will be

Hence," Anil " is the correct answer,

**Q48. Answer: (a) Sahil is directly across the table from Aarti**

Eight friends - Rita, Priya, Sita, Aarti, Sahil, Sameer, Biswas, and Anil-are sitting around a circular table facing each other .Rita's husband is sitting directly across the table from her. Sameer is to the immediate left of Anil and third to the right of Rita (so, Anil is the husband of Rita). Aarti is sitting to the immediate right of Rita.

combining the statements we can draw a circle like bellow

Priya's husband, and her best friend, Rita are sitting on her either side(the only possible place for Priya is to the immediate left of Rita, as priya is sitting between Rita and Priya's Husband). Rita is sitting to the left of Sameer's wife.

Aarti and Sahil are the only two unmarried people in the group. Sameer can't be priya's husband(from the diagram as sammer's place is already fixed), so, Biswas will be Priya's husband and Sita will be Sammer's wife. The final sitting arrangement will be

Hence, Sahil is directly across the table from Aarti.

**Q49. Answer: (d) Completed the age of 35 years**

The correct answer is Completed the age of 35 years.

• Only Indian citizens above 35 years of age are eligible for the post of President of India.

• According to Article 58 of the Constitution:

• A person shall be eligible for election as President only if he is a citizen of India.

• Has completed the age of thirty-five years.

• Qualified for election as a member of the House of the People.

Important Points

• A person has to meet a certain set of qualifications to be eligible for the position of a Chief Minister:

• To be a citizen of India is the fundamental criterion.

• Should be at least 25 years of age or more.

• Should be a member of the state legislature.

• A person will be eligible to become the Prime Minister:

• If he is a citizen of India and a member of either house of the Parliament.

• He must have completed 25 years of age in case he is a member of Lok Sabha and 30 years in the case of Rajya Sabha.

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**Q50. Answer: (c) Reverse Osmosis**

The correct answer is Reverse Osmosis.

• Reverse Osmosis is a technology that is used to remove a large majority of contaminants from water by pushing the water under pressure through a semi-permeable membrane.

• It is a process where you demineralize or deionize water by pushing it under pressure through a semi-permeable Reverse Osmosis Membrane.

Important Points

| | |
|---|---|
| **Turgor pressure** | **Turgor pressure is exerted by fluid in a cell that presses the cell membrane against the cell wall. Fungi, protists, bacteria, and plants all secrete various extracellular molecules form together to create a solid wall on the outside of their cells. As water fills the cells, it pushes against the cell membrane and cell wall, producing turgor pressure.** |
| Osmosis | It is a process where a weaker saline solution will tend to migrate to a strong saline solution. Examples of osmosis are when plant roots absorb water from the soil and our kidneys absorb water from our blood. |
| Cytolysis | It is also known as osmotic lysis, which occurs when a cell bursts and releases its contents into the extracellular body due to a large influx of water into the cell, far exceeding the capacity of the cell membrane to contain the extra volume. |

**Q51. Answer: (c) July 16, 1991**

The correct answer is July 16, 1991.

Important Points

• On July 16, 1991, the world's first hospital train set out on a journey from Mumbai's Chhatrapati Shivaji Terminus on its maiden journey.

• Lifeline Express continues on its journey of taking medical aid to thousands of poor patients living in far-flung areas of rural India.

• It was started by a Mumbai based NGO, Impact India Foundation (IIF).

• In 2016, the train got two new coaches from the Railways for services in cancer detection and family planning.

• The train has covered 173 projects in 18 states and also covered 2 lakh km distance.

**Q52. Answer: (a) Eco Action Day**

The correct answer is Eco Action Day.

• Eco Action Day is an annual nationwide campaign in Singapore encouraging awareness and action for the environment, which culminates in the celebration of World Environment Day on June 5th.

• Eco Action Day was initiated by Ricoh Asia Pacific.

Important Points

| IMPORTANT DAY | DATE |
|---|---|
| Earth Day | 22 April |
| Cycling Day | 3 June |
| World Health Day | 7 April |
| World Malaria Day | 25 April |
| World Water Day | 22 March |
| World Plantation day | 21 March |
| International Plastic Bag Free Day | 3 July |

**Q53. Answer: (c) 25 minutes**

Given:

It takes 12.5 minutes to completely fill a vessel with juice. However, kids are continuously drinking juice from the vessel at a rate which can empty the vessel in 25 minutes.

Calculation:

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Time taken to fill the vessel is 12.5 minutes

In 1 minute vessel filled by 1/12.5 parts or 2/25 parts

Time taken to empty the vessel is 25 minutes

In 1 minute vessel empty by 1/25 parts

In one minute total vessel filled by (2/25 – 1/25) parts = 1/25 parts

Total time required to fill the vessel is 25 minutes

Therefore To completely fill the vessel it will take 25 minutes.

Time taken to fill the vessel is 12.5 minutes

Time taken to empty the vessel is 25 minutes

Time ratio = 1 : 2

Efficiency ratio = 2 : 1

In 12.5 minutes vessel filled by ½ part

Therefore Total time to fill the vessel = 2 × 12.5 minutes

=> 25 minutes

**Q54. Answer: (b) 10-13-23-17-7**

Take the place value of alphabets,

G = 7, U = 21, E = 5, S = 19, T = 20

G → 7 + 2 = 9

U → 21 - 2 = 19

E → 5 + 2 = 7

S → 19 - 2 = 17

T → 20 + 2 = 22

Similarly,

H = 8, O = 15, U = 21, S = 19, E = 5,

H → 8 + 2 = 10

O → 15 - 2 = 13

U → 21 + 2 = 23

S → 19 - 2 = 17

E → 5 + 2 = 7

Hence, Option 2 is the answer.

**Q55. Answer: (b) 1919**

The correct answer is 1919.

• Under the command of Colonel Reginald Dyer, soldiers opened fire on a large number of people gathered at Jallianwala Bagh on 13 April 1919.

• It was estimated that over 1,000 people lost their lives and another 1,500 people were injured in the firing.

• Apart from the main entrance, there was no way for the crowd to escape the garden as the area was surrounded by buildings. This is a major reason for the high number of casualties.

Important Points

• Jallianwala Bagh Massacre also called the Massacre of Amritsar.

• Tagore was awarded the knighthood by King George v in1915, but he repudiated it in 1919 as a protest against the Amritsar (Jallianwala Bagh) Massacre. He is sometimes referred to as “the Bard of Bengal”.

• After this massacre, Gandhi began his first large-scale and sustained nonviolent protest (satyagraha) campaign, the Non-Cooperation Movement (1920–22).

**Q56. Answer: (d) Subhas Chandra Bose**

The correct answer is Subhas Chandra Bose.

• His famous speech ‘Give me blood, and I shall give you freedom!’ was made in Burma in 1944 to members of the Indian National Army.

• Subhas Chandra Bose (Netaji) (23 January 1897 – 18 August 1945) is known for his role in India's independence movement.

• He was born on 23rd January 1897, in Cuttack, Orissa Division, Bengal Province, to Prabhavati Dutt Bose and Janakinath Bose.

• He earned the title ‘Netaji’, in Germany by the Indian soldiers of the Azad Hind Fauj in 1942.

• His very famous slogan is, “Give me blood, and I shall give you freedom!” as well as “Jai Hind”.

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• He was elected the President of the All India Youth Congress and also the Secretary of Bengal State Congress.

• He formed the All India Forward Block.

• He is said to have died in 1945 when his plane crashed in Taiwan. However, there are still many conspiracy theories regarding his death.

Important Points

| | |
|---|---|
| **Jawaharlal Nehru** | **• Jawaharlal Nehru was the first Prime minister of India. He also India's longest-serving prime minister (15-Aug-1947 to 27-May-1964). - He also India's longest-serving prime minister. - Books were written by him: The Discovery of India, Letters from a Father to his Daughter, Glimpses of World History, etc. - His birthday anniversary is celebrated as 'Children's Day' in India (14 November). He is also known as Chacha Nehru.** |
| Mahatma Gandhi | • Mahatma Gandhi said “Sanitation is more important than political independence,” while leading a non-violent movement for India’s independence in 1947. - In a speech entitled, "Do or Die (Karo ya Maro)," given on by Mahatma Gandhi. - Mahatma Gandhi was the first person whose picture was depicted on free India’s stamp in 1948. - Books written by him are The Story of my Experiments with Truth, Hind Swaraj, Ashram Observances in action, India of My Dreams. |
| Chandra Shekhar Azad | • He was an Indian revolutionary who organized and led a band of militant youth during India's independence movement. - He joined the Hindustan Republican Association (HRA) and participated in several violent crimes, notably the Kakori train robbery (1925) and the revenge killing of a British police officer (1928). |

Key Points

• Jawaharlal Nehru along with Srinivasa Iyengar and Subhash Chandra Bose founded the Independence for India League in the year 1928 which put forth the demand for complete independence.

**Q57. Answer: (a) Systems, Applications, Products**

The correct answer is Systems, Applications, Products.

Important Points

• SAP is one of the world’s leading producers of software for the management of business data processes.

• SAP provides “future-proof Cloud ERP solutions that will power the next generation of business”.

• SAP can boost your organization's efficiency and productivity by automating repetitive tasks, making better use of your time, money, and resources.

Key Points

• An SAP number is a unique six-digit number used by a municipality to identify a vendor in its system.

**Q58. Answer: (a) ÷ and +**

Given Equations:- 56 + 7 ÷ 5 × 3 - 2 = 21

By interchanging the two sign,

Check the option 1) ÷ and +, we get

→ 56 ÷ 7 + 5 × 3 - 2 = 21 (Using BODMAS)

→ 8 + 5 × 3 - 2 = 21

→ 8 + 15 - 2

→ 23 - 2

→ 21

Option 1 is correct so no need to check other option,

Hence, the Option 1 is the answer.

**Q59. Answer: (d) Jammu and Kashmir**

The correct answer is Jammu and Kashmir.

• Jammu & Kashmir is by far the largest producer of apples in India.

• After Jammu and Kashmir (J&K), comes Himachal Pradesh (H.P.), and Uttar Pradesh (U.P.) hills in terms of apple production.

• According to figures from the National Horticulture Board in 2017-18, the state produced 77.7% of apples in India.

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Key Points

• The apple cultivar ‘Ambri’, is considered to be indigenous to Kashmir.

**Q60. Answer: (c) Rs. 4000**

Given:

Priya invested a certain amount of money and got back an amount of Rs. 8800 after 3 years and the rate of simple interest was 40%

Concept Used:

If principal be ‘p’, rate of interest be r% then the simple interest after t year will be (p × r × t/100)

And the amount will be [(p × r × t/100) + p]

Calculation:

Let principal be p

Rate of interest is 40% p.a.

And time = 3 year

After 3 years total simple interest = (p × 40 × 3)/100

=> 6p/5

Amount after 3 year = 6p/5 + p

=> 11p/5

Now, according to the given condition,

=> 11p/5 = 8800

=> p = (8800 × 5)/11

=> p = Rs. 4000

Therefore The principal amount invested by Priya was Rs. 4000

**Q61. Answer: (d) Gujarat**

The correct answer is Gujarat.

• Indian Lions or Asiatic Lions is one of five big cat species found in India, a single population exists in the Gir Forest National Park of Gujarat state.

• Asiatic Lion Reintroduction Project by Indian Government to provide an alternate home in other states of India such as Jawahar Sagar Wildlife Sanctuary(Raj), Darrah National Park(Raj), Kuno Wildlife Sanctuary Madhya Pradesh, and Barda Wildlife Sanctuary Gujarat.

Important Points

• List of Wildlife Sanctuary in India:

| STATE | WILDLIFE SANCTUARY |
|---|---|
| Jammu and Kashmir | Trikuta WLS, Nandni WLS, Changtang Wildlife Sanctuary, Jasrota WLS, Limber WLS, Overa-Aru Biosphere Reserve. |
| West Bengal | Chapramari WLS, Lothian Island WLS, Jore Pokhri WLS, Bethuadahari WLS, Buxa Tiger Reserve. Sundarbans Tiger Reserve. |
| Karnataka | Adichunchanagiri Hills WLS, Arabithittu WLS, Thimlapura WLS, Ramadevara Betta Vulture WLS, Chincholi WLS. |
| Gujarat | Wild Ass WLS, Gulf of Kachchh Marine National Park, Rampart Vidi WLS, Paniya WLS, Purna WLS, Girnar WLS. |

**Q62. Answer: (b) 5^(th) of June every year**

The correct answer is 5^(th) of June every year.

Important Points

• Since 1974, World Environment Day has been celebrated every year on 5 June.

• Its motto is engaging governments, businesses, celebrities, and citizens to focus their efforts on a pressing environmental issue.

• The theme for World Environment Day 2020 is, 'Time for Nature'.

Key Points

| DATE | EVENT |
|---|---|

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| | |
|---|---|
| 10^(th) December | Human Rights Day |
| 5^(th)September | Teachers' Day |
| 12^(th) June | World Day Against Child Labour |

Additional Information

• Ramdeo Misra laid the foundations of ecology and environmental science in India.

• He was called as 'father of Indian ecology'.

• The theme of World Environment Day for 2019 is “Air pollution”.

**Q63. Answer: (d) 375**

Given:

Given numbers are 15, 25 and 125.

Concept Used:

LCM (Least Common Multiple): LCM of x and y is the least common multiple of x and y which is perfectly divisible by both x and y

For Example,

3 → Multiple of 3 are 3, 6, 9, 12, 15, 18, 21, 24, 27, …

4 → Multiple of 4 are 4, 8, 12, 16, 20, 24, 28, 32, …

Here common are 12 and 24. But of these 12 is least

Therefore LCM of 3 and 4 is 12

Calculation:

=> 15 = 5 × 3

=> 25 = 5 × 5

=> 125 = 5 × 5 × 5

LCM of 15, 25 and 125 is 5 × 5 × 5 × 3 = 375

Therefore The required LCM of 15, 25 and 125 is 375

**Q64. Answer: (c) Nivaran Portal**

The correct answer is Nivaran Portal.

• 2016 at Rail Bhawan formally launched the NIVARAN portal, an online system for redressal of service related grievance of serving and former railway employees.

• Former Railway Minister Suresh Prabhu had launched this portal.

Important Points

• Samadhan Portal is for Industrial Disputes.

• Monitoring And Disposal, Handling of Apprehended/Existing Industrial Dispute (SAMADHAN) allow online registration with the intent to make justice for workmen simple & quick.

**Q65. Answer: (d) Rs. 5000**

Given:

A certain sum amounts to Rs. 7200 in 2 years at 20% per annum compound interest, compounded annually

Concept Used:

If a certain principal/sum be P, Rate of interest be r% and time be t year

Then, Amount (sum + interest), (A) = P(1 + r/100)^t

Calculation:

Let sum be Rs. P

Rate of interest (r) = 20% p.a.

Time (t) = 2 years

Amount (A) = 7200

$7200 = P(1 + 20/100)^2$

$=> 7200 = P(6/5)^2$

=> P = 7200 × 5/6 × 5/6

=> P = Rs. 5000

Therefore The required sum is Rs. 5000

Compound interest means (interest on sum + interest on interest)

Let, sum = 100

Rate of interest = 20%

For first year interest on sum 100 is 20 also for second year interest on sum 100 is 20

But in second year additional sum = 20, which is first year's interest

Interest on 20 at 20% rate for 1 year = 4

Therefore After two year total amount = (100 + 20 + 20 + 4)

=> 144

Now, according to given condition,

144 = 7200

=> 100 = (7200/144) × 100

=> 100 = 5000

Therefore Required sum is Rs. 5000.

**Q66. Answer: (b) 481/385**

Given:

4/11 + 2/7 + 3/5

Concept Used:

Concept of the fractional addition

In this process first, we should take the LCM of all denominator then we have to divide the LCM by the particular denominator of the fraction. Next, we have to multiply the particular numerator by the quotient and will do the same with all fraction and finally perform operations between fractions as mention in the question.

Calculation:

LCM of 11, 7 and 5 is 11 × 7 × 5 = 385

4/11 + 2/7 + 3/5

=> [(4 × 7 × 5) + (2 × 11 × 5) + (3 × 11 × 7)]/385

=> (140 + 110 + 231)/385

=> 481/385

Therefore 4/11 + 2/7 + 3/5 = 481/385

**Q67. Answer: (b) 100%**

The correct answer is 100%.

Important Points

• Finance Minister Arun Jaitley in its Budget Speech on 29 Feb 2016 has announced that 100% FDI will be allowed through the FIPB route in marketing of food products produced and manufactured in India.

• 100% foreign direct investment (FDI) in the marketing of food products made in Asia's third-largest economy.

Key Points

• A foreign direct investment (FDI) is an investment made by a firm or individual in one country into business interests located in another country.

**Q68. Answer: (d) Sister**

Family chart

Given statement:-

The lady is Arun's mother's brother's mother's only daughter's daughter.

Family tree according to the given statement:-

Hence, the lady is Arun's sister.

**Q69. Answer: (a) 7.4**

The correct answer is 7.4.

• The approximate value of the pH of Human blood is 7.4.

Important Points

• Acidity and alkalinity are measured with a logarithmic scale called pH.

• pH is the negative logarithm of the hydrogen ion concentration: pH = −log [H+]

• The square brackets around the H+ mean "concentration" relative to pure water.

• A pH less than 7 is acidic and a pH greater than 7 is basic.

• An acid is a substance that donates hydrogen ions.

• An acid is dissolved in water, the balance between hydrogen ions and hydroxide ions is shifted. there are more hydrogen ions than hydroxide ions in the solution and makes the solution is acidic.

• A base is a substance that accepts hydrogen ions.

• A base is dissolved in water, the balance between hydrogen ions and hydroxide ions shifts the opposite way. Because the base "soaks up" hydrogen ions, the result is a solution with more hydroxide ions than hydrogen ions and makes the solution alkaline.

Key Points

| pH VALUE | H^+ CONCENTRATION | EXAMPLES |
|---|---|---|
| 0 | 10000000 | battery acid |
| 1 | 1000000 | gastric acid |
| 2 | 100000 | lemon juice, vinegar |
| 3 | 10000 | orange juice, soda |
| 4 | 1000 | tomato juice, acid rain |
| 5 | 100 | black coffee, bananas |
| 6 | 10 | urine, milk |
| 7 | 1 | pure water, neutral solution |
| 8 | 0.1 | seawater, eggs |
| 9 | 0.01 | baking soda |
| 10 | 0.001 | milk of magnesia |
| 11 | 0.0001 | ammonia solution |
| 12 | 0.00001 | soapy water |
| 13 | 0.000001 | bleach, oven cleaner |
| 14 | 0.0000001 | liquid drain cleaner |

**Q70. Answer: (b) United Nations Framework Convention on Climate Change**

The correct answer is United Nations Framework Convention on Climate Change.

Important Points

• The UNFCCC entered into force on 21 March 1994.

• The 197 countries that have ratified the Convention are called Parties to the Convention.

• The objective of UNFCCC is to stabilize atmospheric concentrations of greenhouse gases at a level that will prevent dangerous interference with the climate system.

• The UNFCCC is a “Rio Convention”, one of two opened for signature at the “Rio Earth Summit” in 1992 held in Rio de Janeiro, Brazil.

**Q71. Answer: (c) 36**

Given-

Standard Deviation(SD) = 6

Concept Used-

Standard deviation (SD) is defined as the square root of the Variance (Var)

Calculation-

Variance(Var) = $SD^2$

=> Variance = $6^2$

=> 36

**Q72. Answer: (d) K**

The logic follows here is:-

B + 1 → C

C + 3 → F

F + 5 → K

K + 7 → R

R + 9 → A

Hence, "K" is the correct answer.

**Q73. Answer: (b) 8**

32 students

20 of them like Spiderman

14 like Batman

6 students like neither Spiderman nor Batman

32 - 6 = 26

26 are those who like something

14 + 20 - 26 = 8

8 are those who like both

hence, option 2 is the answer.

**Q74. Answer: (d) 18**

32 students

20 of them like Spiderman

14 like Batman

6 students like neither Spiderman nor Batman

12 + 6 = 18

8 can't be include because it represents both

18 are those who like Spiderman or Batman

Hence, Option 4 is the answer.

**Q75. Answer: (d) Rs. 100**

Given-

Rs. 200 was distributed among three persons - Anil, Binay and Chinmay. Binay received 50% more than Chinmay. Anil received Rs. 10 more than 150% of what Binay received.

Calculation-

Let share of Chinmay be Rs. x

=> Share of Binay = x + 50% of x = 1.5x

Now, Share of Anil = 150% of (1.5x) + 10 = 2.25x + 10

According to the question -

Share of (Chinmay + Binay + Anil) = 200

=> x + 1.5x + 2.25x + 10 = 200

=> 4.75x = 190

=> x = 40

Therefore Share of Anil = (2.25 × 40) + 10 = Rs. 100

**Q76. Answer: (c) Both conclusion I and II follow**

From the statement, There is no such thing as free lunch → Destiny will look beautiful, But we have to face a lot of struggles to reach the destiny.

Conclusions :-

I. Things that are free, always have a hidden cost → True (Dreaming about the Destiny will be easy, But achieving Destiny by facing all struggles is described as hidden cost).

II. It is impossible to get something for nothing → True (Hard work pays off).

Thus, the correct answer is Both conclusion I and II follows.

**Q77. Answer: (a) Third Generation**

The correct answer is Third Generation.

• Generation in computer terminology is a change in technology a computer is/was being used.

• Initially, the generation term was used to distinguish between varying hardware technologies.

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• Nowadays, generation includes both hardware and software, which together make up an entire computer system.

Important Points

• There are five computer generations known to date:

| GENERATION | DESCRIPTION |
|---|---|
| 1st (1946-1959) | Vacuum tube-based. |
| 2nd (1959-1965) | Transistor-based. |
| 3rd (1965-1971) | Integrated Circuit based. |
| 4th (1971-1980) | VLSI microprocessor-based. |
| 5th (1980-onwards) | ULSI microprocessor-based. |

**Q78. Answer: (c) FROGS**

The logic follows here is :-

Terrestrial animals are animals that live predominantly or entirely on land (e.g., cats, ants, spiders).

Similarly,

Amphibians which rely on combination of aquatic and terrestrial habitats (e.g., Frogs,Newts).

Thus, the correct answer is "FROGS".

**Q79. Answer: (c) Tim Berners-Lee**

The correct answer is Tim Berners-Lee.

• Tim Berners-Lee, a British scientist, invented the World Wide Web (WWW) in 1989 while working at CERN.

• Sir Tim Berners-Lee is a British computer scientist.

Important Points

| | |
|---|---|
| **Robert E. Kahn** | **• He is an American electrical engineer. - He develops the TCP/IP protocols for connecting diverse computers. - He is known as one of the “Fathers of the Internet”.** |
| Linus Torvalds | • He is an American-Finnish software engineer. - He is a developer of the Linux kernel. - He is known for Linux, Git, Subsurface. |
| Ted Nelson | • He is an American scientist in information technology. - He coined the terms hypertext and hypermedia in 1963. |

Key Points

• By October of 1990, Tim Berners-Lee had written the three fundamental technologies that remain the foundation of today’s web:

• HTML: HyperText Markup Language. The markup (formatting) language for the web.

• URI: Uniform Resource Identifier. It is an “address” that is unique and used to identify each resource on the web. It is also commonly called a URL.

• HTTP: Hypertext Transfer Protocol. Allows for the retrieval of linked resources from across the web.

**Q80. Answer: (d) 28 cm**

Given-

A piece of wire, bent in the shape of a square having 44 cm as its side, is subsequently bent to form a circle.

Formula Used-

The perimeter of a Square = 4 × Side

The perimeter of a Circle = 2πr

Calculation-

Let the radius of the circle be r cm

According to the question-

Perimeter of Square = Perimeter of Circle

=> 4 × 44 = 2 × (22/7) × r

=> r = 28 cm

Therefore The radius of the circle is 28 cm.

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**Q81. Answer: (d) 103**

The logic follows here is :-

Here, the letter's numeric represents its opposite letter's numeric value.

B = 25

| B |
|---|
| 25 |

BEST = 62

| B | E | S | T |
|---|---|---|---|
| 25 | 22 | 8 | 7 |

Thus, 25 + 22 + 8 + 7 = 62.

Similarly,

STABLE = ?

| S | T | A | B | L | E |
|---|---|---|---|---|---|
| 8 | 7 | 26 | 25 | 15 | 22 |

Thus, 8 + 7 + 26 + 25 + 15 + 22 = 103

Hence, the correct answer is '103'.

**Q82. Answer: (b) Apollo 11**

The correct answer is Apollo 11.

• The first moon landing occurred on July 20, 1969, on the Apollo 11 mission.

• The crew of Apollo 11 was Neil Armstrong, Michael Collins, and Buzz Aldrin.

• Armstrong and Aldrin crawled from the command module through an interconnecting tunnel into the lunar module, Eagle.

Important Points

| | |
|---|---|
| **Lunokhod 1** | **• Lunokhod 1 was the first lunar rover to land on the Moon's surface, on November 17, 1970. - It was carried to the Moon on board the Soviet spacecraft Luna 17 and landed in a crater called the Sea of Rains.** |
| Chandrayan I | • It was the first lunar space probe of the Indian Space Research Organisation (ISRO) and found water on the Moon. - It lifted off on 22 October 2008. - It was under the control of the Indian Space Research Organisation (ISRO). |
| Viking 1 | • Viking 1 consisted of both an orbiter and a lander designed to take high-resolution images, and study the Martian surface and atmosphere. - The Viking program was a NASA mission that sent two spacecraft to the planet Mars. |

**Q83. Answer: (b) 478**

The logic follows here is :-

| J | K | Q | T |
|---|---|---|---|
| × | ÷ | • | • |

26 J 74 K 4 T 5 Q 2

Inserting the given Arithmetic operators according to given question the equations follows here is :-

26 × 74 ÷ 4 - 5 + 2

Using BODMAS Rule :-

26 × 74 ÷ 4 - 5 + 2 =

26 × 18.5 - 5 + 2 =

481 - 5 + 2 =

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483 - 5 = 478

Thus, the correct answer is '478'.

**Q84. Answer: (a) 52**

Given-

Manu's piggy bank contains Rs. 221 in the form of 50 paise, Rs. 1 and Rs. 2 coins in the ratio of 4 : 3 : 6.

Concept Used-

Money value of coins = Money value of each coin × Total number of coins

Calculation-

Let the total number of 50 paise, Rs. 1 and Rs. 2 coins be 4x, 3x and 6x respectively

=> Value of 50 paise coins = (1/2) × 4x = Rs. 2x

=> Value of 1 Rs coins = 1 × 3x = Rs. 3x

=> Value of 2 Rs coins = 2 × 6x = Rs. 12x

According to question-

2x + 3x + 12x = 221

=> 17x = 221

=> x = 13

Therefore required total no of 50 paise coins = 4 × 13 = 52

**Q85. Answer: (c) Nandu Natekar**

The correct answer is Nandu Natekar.

• Badminton ace Nandu Natekar has been inducted into the Legends Club, founded by the late Cricket Club of India president Raj Singh Dungarpur.

• Nandu Natekar is the first non-cricketer added to CCI's Legends Club.

Important Points

| | |
|---|---|
| **Milkha Singh** | **• He is a former Indian track and field athlete. - His fourth-place time of 45.73s in the 400 m at the 1960 Rome Olympics became the national record. - Pakistan's General Ayub Khan bestowed the title 'Flying Sikh of India' to Milkha Singh after his brilliant performance at the Asian Games. - He is the winner of India's first Commonwealth gold, declined the government's Arjuna Award in 2001.** |
| Prakash Padukone | • He is a former Indian badminton player. - He became the first Indian to win the All England Championships. |
| Dhanraj Pillay | • He is a former Indian field hockey player and captain of the Indian national team. - He is the only player to play four Olympics, four World Cups, four Champions Trophies, and four Asian Games. - Under his captaincy, India won the 1998 Asian Games and 2003 Asia Cup. - His biography "Forgive Me Amma" was published in 2007. |

**Q86. Answer: (d) Only conclusion I follows.**

From statement 1 → People who do exercise regularly are health conscious in there life.

From statement 2 → Meena, in-spite of her busy schedule she do exercise everyday.

Conclusions :-

I. Meena is health conscious → True (From statement 1,2 people who do exercise everyday are health conscious and Meena do exercise everyday).

II. Meena's family has inculcated the importance of exercise right from her childhood → False (From statement 1,2 there is no information about Meena's family about her exercise from childhood).

Thus, Only Conclusion I follows.

**Q87. Answer: (b) 53**

The logic follows here is :-

| | | | |
|---|---|---|---|
| • | • | × | ÷ |

| | | | |
|---|---|---|---|
| × | ÷ | • | • |

18 + 12 - 4 ÷ 5 × 6

After interchanging Arithmetic operator according to the given question the equation is :-

18 × 12 ÷ 4 + 5 - 6

Using BODMAS Rule :-

18 × 12 ÷ 4 + 5 - 6 =

18 × 3 + 5 - 6 =

54 + 5 - 6 =

59 - 6 = 53

Thus, the correct answer is '53'.

**Q88. Answer: (d) Sachin Tendulkar**

The correct answer is Sachin Tendulkar.

Key Points

• "Playing It My Way" was launched on 5 November 2014 in Mumbai.

• Sachin Tendulkar is a former Indian international cricketer who was also the captain of the Indian national team.

• He is considered the world's most prolific batsman of all time.

• He was the sport's first batsman to score a double century (200 runs not out) in a single One Day International match.

• Sachin Tendulkar is known as the god of cricket.

• Sachin Tendulkar inherited the title Little Master from cricketer Sunil Gavaskar.

• Sachin Tendulkar to receive Bharat Ratna. At the age of 40, Tendulkar is the youngest to be chosen for Bharat Ratna.

• Sachin Tendulkar Played International Cricket For Pakistan Before Making His India Debut.

• Brabourne Stadium(Mumbai) hosted a match between the Cricket Club of India (CCI) and Pakistanis on January 20, 1987.

• In 1992, Sachin Tendulkar became the first overseas-born player to represent Yorkshire, at the age of 19.

• He is a brand ambassador of MRF Tyres, Aviva life insurance, ICC Cricket World Cup 2015, Indian Olympic Association goodwill ambassador, Skill India Mission.

Important Points

| | |
|---|---|
| **Ryan Harris** | **• He is an Australian cricket coach and former cricketer.** |
| Leander Paes | • He is an Indian tennis player. - He holds the record for the most doubles wins in the Davis Cup. |
| Sania Mirza | • The book “Ace against Odds” is the autobiography of Sania Mirza. - She is an Indian tennis player. - She won the Wimbledon Junior Championship in 2003. - She is the first Indian woman to win a Women’s Tennis Association (WTA) title. - Sania Mirza is the first Indian woman to win a Women’s Doubles Grand Slam. |

**Q89. Answer: (c) DJJ**

The logic follows here is :-

Thus, the correct answer is "DJJ".

**Q90. Answer: (a) Telangana**

The correct answer is Telangana.

• June 2, 2014, the country got its newest, 29th state, in Telangana.

• Kalvakuntla Chandrasekhara Rao has taken oath as the first chief minister of the state.

• It was separated from Andhra Pradesh.

Important Points

| STATE | CAPITAL | CM |
|---|---|---|
| Telangana | Hyderabad | K. Chandrashekar Rao |
| Jharkhand | Ranchi | Hemant Soren |
| Uttarakhand | Dehradun (Winter), Gairsain (Summer) | Pushkar Singh Dhami |

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| | | |
|---|---|---|
| Chhattisgarh | Raipur, Bilaspur | Bhupesh Baghel |

Additional Information

• The foundation day of Jharkhand is 15 November 2000.

• The foundation day of Uttarakhand is 9 November 2000.

• The foundation day of Chhattisgarh is 1 November 2000.

**Q91. Answer: (d) Conclusions 1, 2 and 3 follow**

The least possible Venn diagram for the given statements is as follows,

Conclusions :-

1. Some bullets are arrows → True (It is definite relation between bullets and arrows all arrows are bullets so, some bullets are arrows).

2. Some arrows are spears → True (It is definite relation between arrows and spears all spears are arrows so, some arrows are spears).

3. Some bullets are spears→ True (It is definite relation between bullets and spears all arrows are bullets and all spears are arrows so, some bullets are spears).

4. No bullet is an arrow → False (It is possible but There is no definite relation between bullet and arrow).

Thus, the correct answer is Conclusions 1,2 and 3 follows.

**Q92. Answer: (a) IR**

Thus, the logic follows here is :-

Hence, Second letter is opposite of first letter in the row of Alphabet order.

Thus, the correct answer by verifying options is "IR".

**Q93. Answer: (b) 0**

Concept Used-

The unit digit of the product of any given numbers will be the same as the unit digit of the product of the last digit of each such number.

Cyclicity- It is the number after power of which each unit digit of any number repeats itself.

Ex- $3^1$= 3, $3^2$= 9, $3^3$ = 27, 3^4 = 81. If we proceed further i.e 3^5 = 243 the unit digit 3 will repeat itself.

Therefore Cyclicity of 3 is 4.

Similarly, cyclicity of 4 is 2 and that of 5 is 1(Because unit digit in $5^n$ is always 5)

Calculation-

Considering the given expression - 45231632 × 22241632 × 32251632

Because 1632 is divisible by 4, Unit digit in 4523^(1632) is 1(3^4= 81(i.e 1))

Unit digit in 2224^(1632) is 6.

Unit digit in 3225^(1632) is 5.

Therefore Unit digit in 4523^(1632) × 2224^(1632) × 3225^(1632) = 0.(Because 1 × 6 × 5 = 30)

**Q94. Answer: (b) 21.46%**

Given-

The cost price of Persian rug = Rs. 1235

Selling price of Persian rug = Rs. 1500

Formula Used-

Gain percentage = (SP - CP)/CP × 100

Calculation-

Gain percentage = (1500 - 1235)/1235 × 100 = 265 × 100/1235

=> 21.46 %

**Q95. Answer: (d) Bankim Chnadra Chattopadhyay**

The correct answer is Bankim Chandra Chattopadhyay.

• Bankim Chandra Chattopadhyay is the author of "Anandamath".

• "Vande Matram" was written by Bankim Chandra Chattopadhyaya.

• It was first composed in the Sanskrit language in the year of 1870s (1875). Later in 1882, it was included in the Bengali novel Anandamath.

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• Other notable works of Bankim Chandra Chattopadhyaya:

• Durgesh Nandini, Kapalkundala, Komalakanter Doptor, Mrinalini, Krishnakanter Will, Bishbrikhsha, Rajsingho, Sitaram, Devi chaudhurani.

Important Points

| | |
|---|---|
| **Dinabandhu Mitra** | **• He was a Bengali dramatist. - Nil Darpan or The Indigo Planting Mirror was a Bengali play written by him in 1858.** |
| Subramania Bharathi | • He was a poet, freedom fighter, and social reformer from Tamil Nadu. - He was known as Mahakavi Bharathiyar. - His poems are “Kannan Pattu, Nilavum Vanminum Katrum, Panchali Sabatam, and Kuyil Pattu”. |
| Bhartendu Harish Chandra | • He is known as the father of Hindi literature as well as Hindi theatre. - His plays are Bharat Durdasha, Andher Nagari. |

**Q96. Answer: (c) Only Conclusion 1 and 4 follows**

The least possible Venn diagram for the given statements is as follows,

Conclusions :-

I. Some White are Black → True (It is definite relation between white and black that all black are white so, some white are black).

II. All Black are Red → False (It is possible but not define as no definite as no direct relation is given between them).

III. All Whites are Black → False (It is possible but not define as no definite as no direct relation is given between them).

IV. Some Whites are Red → True (It is definite relation between white and red that some reds are black so, some whites are red).

Thus, Only Conclusions 1,4 follows.

**Q97. Answer: (d) A kind of vegetable**

Jumbled word:

OPTTAO

Word formed using jumbled letters:

POTATO

Potato is a kind of vegetable.

Thus, the correct answer is "A kind of vegetable".

**Q98. Answer: (a) KATHAKALI**

The logic is :

Odissi is dance form of Odisha.

Similarly,

1. Kathakali is the classical dance form of Kerala.
2. Kathak is the classical dance form of Uttar Pradesh(North India).
3. Kuchipudi is the classical dance form of Andhra Pradesh
4. Bharatnatyam is the classical dance form of Tamil Nadu.

Thus, the correct answer is "Kathakali".

**Q99. Answer: (b) 20 days**

Given-

Time taken to do the complete work by X, Y, Z is 30 days, 45 days and 90 days respectively.

Concept Used-

Total Work = Efficiency of Worker × Total Time

Calculation-

Let the total work be 90 units.

Efficiency of X = 90/30 = 3 units/day

Efficiency of Y = 90/45 = 2 units/day

Efficiency of Z = 90/90 = 1 unit/day

Let total time taken to complete the work be 2d days

Here X has worked for all the time but Y and Z has worked for only half the time.

According to the question -

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(Efficiency of X) × 2d + (Efficiency of Y + Z) × d = 90

=> 3 × 2d + (2 + 1) d = 90

=> 9d = 90

=> 2d = 20 days

Therefore The work can be completed in 20 days.

**Q100. Answer: (b) 0.508**

Given-

0.275 + 0.569 - 0.336

Concept Used-

Concept of addition and subtraction.

Calculation-

0.275 + 0.569 - 0.336

=> 0.844 - 0.336

=> 0.508

**Q101. Answer: (d) Bada Imambara, Uttar Pradesh**

The correct answer is Bada Imambara, Uttar Pradesh.

Important Points

• A World Heritage Site is a place that is listed by UNESCO for its special cultural or physical significance.

• India has 40 world heritage sites that include 32 Cultural properties, 7 Natural properties, and 1 mixed site.

• Rani ki Vav at Gujarat, Chhatrapati Shivaji Terminus at Maharashtra, Bhimbetka Caves at Madhya Pradesh all are UNESCO World Heritage sites in India.

• Chhatrapati Shivaji Terminus, Mumbai was inscribed to the UNESCO World Heritage Sites list in 2004.

• The Chhatrapati Shivaji Terminus (formerly Victoria Terminus), Mumbai on the Western Part of India touching the shores of the Arabian Sea.

• This building, designed by F. W. Stevens, is spread across a 2.85-hectare area. The terminal was built over a period of 10 years starting in 1878.

• Rani-ki-Vav (the Queen’s Stepwell) at Patan, Gujarat was inscribed to UNESCO World Heritage Sites in 2014.

• Situated on the banks of the Saraswati river, this stepwell was built as a memorial to a king.

• Rock Shelters of Bhimbetka at Madhya Pradesh was inscribed to UNESCO World Heritage Sites in 2003.

• These shelters are located within the foothills of the Vindhya range, on the southern edge of the central Indian plateau.

**Q102. Answer: (c) 0.25 A**

The correct answer is 0.25 A.

• Given power consume by a bulb (P) is 60 W and source (V) is 240 V.

We know, Current (I) = P/V = 60/240 = 0.25 A.

So, the current drawn by the bulb will be 0.25 A.

**Q103. Answer: (b) Surat**

The correct answer is Surat.

• Surat has the cleanest railway station in the country, followed by Rajkot and Bilaspur (Chhattisgarh), according to an Indian Railway Catering and Tourism Corporation (IRCTC) survey, released in May 2016.

• Prime Minister Narendra Modi will give away ‘the cleanest railway station and premises’ award to the Surat railway station at the function of INDOSAN in New Delhi.

• The survey was conducted at 407 railway stations, which include 75 A1 stations and 332 A category stations.

Key Points

• Jaipur topped the list of cleanest railway stations in the country, as per a report 'Swachh Rail, Swachh Bharat 2019' released by Ministry of Railways.

**Q104. Answer: (b) Rs. 2420**

Given:

Principal, (P) = Rs. 2000,

Rate (R) = 20% p.a.

Time, (T) = 1 year

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Formula used:

A = P(1 + R/100)^T

Here, A = Amount

Compound Interest = Amount - Principal

Concept Used:

In half-yearly,

Rate = R/2 and Time = 2T

Calculation:

Rate and Time when compounded half-yearly,

R = 10% per half-year and T = 2 half years

A = P(1 + R/100)^T

=> A = 2000(1 + 10/100)²

=> A = 2000 × 11/10 × 11/10

Therefore The amount is Rs. 2420

Shortcut Trick

10% = 1/10

Amount = 2000 × 11/10 × 11/10

=> Amount = Rs. 2420

Therefore The amount is Rs. 2420

**Q105. Answer: (d) Madan Mohan Malaviya & Atal Bihari Vajpayee**

The correct answer is Madan Mohan Malaviya & Atal Bihari Vajpayee.

• Bharat Ratna, the highest civilian award, was bestowed posthumously on freedom fighter and eminent educationist Madan Mohan Malaviya at Rashtrapati Bhavan.

• Former prime minister Atal Bihari Vajpayee, who too was honored with the Bharat Ratna.

Important Points

• The awards, which are announced on Republic Day every year, in 2015 included two Bharat Ratnas, three Padma Vibhushans, 12 Padma Bhushan, and 34 Padma Shri.

• BJP leader and former deputy prime minister L.K. Advani, Punjab Chief Minister Parkash Singh Badal, and Jagadguru Swami Rambhadracharya received the Padma Vibhushan.

Additional Information

• APJ Abdul Kalam got the Padma Bhushan in 1981 and the Padma Vibhushan in 1990.

• In 1997, Kalam received India's highest civilian honor, the Bharat Ratna, for his contribution to the scientific research and modernization of defense technology in India.

• Amitabh Bachchan was honored by Dadasaheb Phalke Award (2019), Padma Vibhushan (2015), Padma Bhushan (2001), Padma Shri in 1984.

**Q106. Answer: (c) 345677654322**

Concept used:

Try to convert the number in multiples of 100.

Calculation:

345678 × 999999

=> 345678 × (1000000 – 1)

=> 345678000000 – 345678

=> 345677654322

Therefore The required value is 345677654322

**Q107. Answer: (d) 9720**

Concept used:

Find the L.C.M of a given number and divide the greatest number of four-digit and multiply with the number and quotient which we get.

Calculation:

L.C.M of 12, 15, 20 and 54 = 540

The greatest number of four-digit = 9999

Dividing 9999 by 540 then, our quotient is 18

The greatest number of four digit which is exactly divisible by 12, 15, 20 and 54 = 540 × 18 = 9720

Therefore The required number is 9720

**Q108. Answer: (b) PRXQWDLQ**

The logic is :

Similarly,

Thus, the correct answer is "PRXQWDLQ".

**Q109. Answer: (c) 50%**

Given:

CP of 18 pen = SP of 12 pen

Formula used:

Gain% = (Gain × 100)/CP

Gain = SP – CP

Calculation:

Let SP of 1 pen be Re 1

So, SP of 18 pens = Rs. 18

CP of 18 pens = SP of 12 pens = Rs. 12

Gain = 18 – 12 = Rs. 6

Gain % = (6/12) × 100) = 50%

Therefore The Gain% is 50%

CP of 18 pen = SP of 12 pen

CP/SP = 12/18 = 2/3

Gain% = {(3 – 2) × 100}/2 = 50%

Therefore The Gain% is 50%

**Q110. Answer: (c) Epidermis**

The correct answer is Epidermis.

• The upper or outer layer of the two main layers of cells that make up the skin.

• The epidermis is mostly made up of flat, scale-like cells called squamous cells.

• The deepest part of the epidermis also contains melanocytes. These cells produce melanin, which gives the skin its color.

Important Points

| | |
|---|---|
| **Sclera** | **• the sclera is the white part of your eye that surrounds the cornea. - It's a tough, protective covering and the muscles that control eye movement are connected to it. - It is dense connective tissue made of mainly type 1 collagen fibers, oriented in different directions.** |
| Endodermis | • It is a specialized layer of cells marking the inner limit of the cortex. - A typical endodermis is usually present in roots, in aquatic and subterranean stems, and the aerial stems of certain families. |
| Hypodermis | • The hypodermis (also called the subcutaneous layer or superficial fascia) is a layer directly below the dermis. - It connects the skin to the underlying fascia (fibrous tissue) of the bones and muscles. |

**Q111. Answer: (d) Anaimudi Peak**

The correct answer is Anaimudi Peak.

• It is known as Pride of state Kerala.

• It Highest peak of Western Ghat (8,843ft) and South India.

• Also known as the Himalayas of the South and Everest of South India.

Important Points

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| | |
|---|---|
| **Doddabetta** | **• The highest mountain of Nilgiri mountain. - 4th highest peak of South India(2,637 m.) located in Tamil Nadu. - It is the fourth highest peak in South India next to Anamudi, Mannamalai, and Meesapulimala.** |
| Mullayanagiri | • The highest peak of Karnataka(1,930 metres) - Belongs from the hill range of Western Ghat. |
| Kalsubai | • A mountain in the Western Ghat, located in Maharastra. |

**Q112. Answer: (d) 24/29, 7/9, 5/13, 11/47**

Given:

Our number from option = 7/9, 5/13, 11/47, 24/29

Concept used:

Make denominator of every fraction same and then compare

Calculation:

Take L.C.M of the denominator of all fraction

L.C.M of 9, 13, 47, 29 = 159471

Making denominator same = 124033/159471, 61335/159471, 37323/159471, 131976/159471

Therefore Descending order of fraction is 24/29, 7/9, 5/13, 11/47

Make the fraction in decimal form

7/9 = 0.78, 5/13 = 0.38, 11/47 = 0.23, 24/29 = 0.83

Therefore Descending order of fraction is 24/29, 7/9, 5/13, 11/47

**Q113. Answer: (c) 48**

Given:

data - 67, 31, 53, 22, 66, 8, 43, 54, 77, 13, 43, 97, 36, 12, 90, 53

Concept used:

Arrange the number in asscending order and then apply the formula of Median

Formula used:

Median = ((n + 1)/2)^(th) term, when n is odd

Median = 1/2{(n/2)^(th) term + (n/2 + 1)^(th) term}, when n is even

Calculation:

Arranging the number in ascending order = 8, 12, 13, 22, 31, 36, 43, 43, 53, 53, 54, 66, 67, 77, 90, 97

Here, n = 16, which is even

Median = 1/2{8^(th) term + 9^(th) term} = 1/2(43 + 53) = 48

Therefore The value of the median is 48

Find the average of middle two-term in case of even number and in case of odd number middle number is Median.

Median = 1/2(43 + 53) = 48

Therefore The value of the median is 48

**Q114. Answer: (c) Dipika Allikal, Joshna Chinappa**

The correct answer is Dipika Allikal, Joshna Chinappa.

• Dipika Allikal and Joshna Chinappa, together won the squash women's doubles gold medal, at the Commonwealth Games 2014.

• Joshna Chinappa along with Dipika allikal also won a silver medal at the 2018 Gold Coast edition.

Important Points

• Joshna Chinappa is a professional squash player from India.

• She was the first from India who won the under-19 British Junior Squash Championship title in 2005.

• She was the first Asian Squash Champion from India who won the gold medal at the 2017 Women's Asian Individual Squash Championships.

• Dipika Allikal is a professional squash player from India.

• She received the Arjuna award in 2012 and PadmaShri in 2014.

• Aparajitha Balamurukan is an academic and professional squash player from India.

• Anaka Alankamony is an Indian squash player.

• She won the Arjuna Award in 2014.
• The 2008 Asian Junior Squash Individual Champion was won by her in Korea.
• She won a bronze medal and a silver medal respectively in the Asian games.

**Q115. Answer: (d) 1.25 Ohm**

The correct answer is 1.25 Ohm.
1/R = 1/5+1/5+1/5+1/5 = 4/5
1/R = 4/5
R = 5/4 = 1.25
So, minimum resistance (R) = 1.25 Ohm.
Key Points
• If N number of resistors connected in parallel, then the equivalent resistance (R_(EQ)) = 1/(1/r1+1/r2+1/r3...+1/rN)
• If N number of resistors connected in series, then the equivalent resistance (R_(EQ)) = r1 + r2 + r3 +…+ rN.
Additional Information
• The total resistance in a parallel circuit is less than the smallest of the individual resistances.

**Q116. Answer: (b) Both statements I and II together are not sufficient**

Statement I:
=> x + 2y = 6
Here, we cannot find the value of x with the help of only one equation
Hence, Statement I alone is insufficient
Statement II:
=> 3x + 6y = 18
Here, we cannot find the value of x with the help of only one equation
Hence, Statement II alone is insufficient
From Statement I and II:
=> x + 2y = 6 ----(1)
=> 3x + 6y = 18 ----(2)
Multiplying equation (1) by 3 we get
=> 3(x + 2y) = 6 × 3
=> 3x + 6y = 18 ----(3)
Here, both equations (2) and (3) is same so we can not find the value of x
Therefore Statements I and II together are not sufficient
Confusion Points
The second equation is only the multiple of first, so we cannot find the values of x and y

**Q117. Answer: (d) Parimarjan Negi**

The correct answer is Parimarjan Negi.
• Parimarjan Negi is known as the youngest chess grandmaster.
• The famous Arjuna award was granted to him in 2010 by the Government of India.
• He won the grandmaster title in 2006 at the age of 13 years.
• He is the youngest grandmaster of India and the second youngest in the world and became the youngest chess grandmaster ever in India by breaking Pentala Harikrishna.

| **First Grandmaster title (2005/2006)** | **Hasting's International Chess Congress** |
|---|---|
| Second GM title (Soon after 2005-06) | 4th Parsvnath International Open Chess Tournament in Delhi. |
| Third and Final GM title (2006) | With Russian Grandmaster Ruslan Sherbakov at the Chelyabinsk Region Superfinal Championship in Satka, Russia. |

Important Points

| **Pendyala Harikrishna** | **• He is a famous chess player from India. - He got Commonwealth Champion in 2001, World Junior Champion in 2004, Asian Individual Champion in 2011.** |
|---|---|

| | |
|---|---|
| Humpy Koneru | • She is also known as an Indian chess grandmaster. - She was the youngest woman to achieve the Grandmaster title in 2002 at the age of 15. - She also achieved awards like Arjuna Award, PadmaShri, Women's World Rapid Chess Championship, etc. |
| Viswanathan Anand | • He is also known as the Indian Chess Grandmaster. - He was also the first grandmaster from India. - Anand was the first to receive India's highest sporting honor Rajiv Gandhi Khel Ratana Award in 1991–92. - He was also the first sportsperson, who was awarded the Padma Vibhushan, India's second-highest civilian award. |

**Q118. Answer: (a) Ashoka**

The correct answer is Ashoka.

• Ashoka belonged to the Maurya dynasty.

• We know about the Maurya dynasty and Ashoka from Arthashastra and Indica of Megasthenes.

• The name Priyadasi belongs to Ashoka.

• He spread Buddhism all over Asia.

• At the time of his reign, the capital of the dynasty was in Pataliputra with provincial capitals at Taxila and Ujjain.

Important Points

| | |
|---|---|
| **Akbar** | **• The great ruler of the Mughal Dynasty. - He abolished jajiya tax in 1564. - He set up Fatepursikri. - Transfer the capital from Agra to Fatehpur Sikri in 1571. - Founded Ibadat khana, a house of worship for all religions in 1575. - Founded Din-I-Ilahi in 1582. - Akbar appointed Tansen of Gwalior, in his court for music. - The navaratnas in Akbar's court are- Abul Fazl, Abdul Rahim Khan-I-Khana, Birbal, Mulla Do-Piyaza Faizi, Raja Man Singh, Raja Todar Mal, Fakir Aziao-Din and Tansen.** |
| Chandragupta | • He was the founder of the Maurya Empire. - He was taught and counseled by Chanakya (also known as Kautilya). - He defeated Seleucus I Nicator, one of the successful satrapies of Alexander the Great. |
| Ajatasatru | • He was known as Kunik. - Dynasty- Haryanka (Magadh in East India) - Founder- Bimbisar.Son of-Bimbisara (known as Shrenik). - Contemporary of- Mahabir and Gautam Buddha. |

**Q119. Answer: (b) Robert Edwards**

The correct answer is Robert Edwards.

Key Points

• The British scientist Robert Edwards began his fundamental research on the biology of fertilization in the 1950s.

• He soon realized that fertilization outside the body could represent a possible treatment of infertility. Other scientists had shown that egg cells from rabbits could be fertilized in test tubes when sperm was added, giving rise to offspring. Edwards decided to investigate if similar methods could be used to fertilize human egg cells.

• Turned out that human eggs have an entirely different life cycle than those of rabbits. In a series of experimental studies conducted together with several different co-workers, Edwards made a number of fundamental discoveries. He clarified how human eggs mature, how different hormones regulate their maturation, and at which time point the eggs are susceptible to the fertilizing sperm. He also determined the conditions under which sperm is activated and has the capacity to fertilize the egg.

• In 1969, his efforts met with success when, for the first time, a human egg was fertilized in a test tube.

Additional Information

• James Dewey Watson KBE is an American molecular biologist, geneticist, and zoologist. In 1953, he co-authored with Francis Crick the academic paper proposing the double helix structure of the DNA molecule.

• Louise Joy Brown is an English woman who was the first human to have been born after conception by in vitro fertilisation, or IVF. Her birth, following a procedure pioneered in Britain, has been described as "one of the most remarkable medical breakthroughs of the 20th Century".

• Joshua Lederberg, ForMemRS was an American molecular biologist known for his work in microbial genetics, artificial intelligence, and the United States space program. He was 33 years old when he won the 1958 Nobel Prize in Physiology or Medicine for discovering that bacteria can mate and exchange genes.

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**Q120. Answer: (a) 20**

The correct answer is 20.

Key Points

• The Lok Sabha is composed of representatives of people chosen by direct election on the basis of Universal Adult Suffrage.

• The maximum strength of the House is 552 members - 530 members to represent the States, 20 members to represent the Union Territories, and 2 members to be nominated by the President from the Anglo-Indian Community.

• At present, the strength of the House is 545. The term of the Lok Sabha, unless dissolved, is five years from the date appointed for its first meeting. However, while a proclamation of emergency is in operation, this period may be extended by Parliament by law for a period not exceeding one year at a time and not extending in any case, beyond a period of six months after the proclamation has ceased to operate.

Additional Information

https://knowindia.india.gov.in/#:~:text=The%20maximum%20strength%20of%20the,adequately%20represented%20in%20the%20House)..)

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