collegebatch.com

click to campus

MAT 2021 Question Paper

Management Aptitude Test conducted by AIMA

MANAGEMENT APTITUDE TEST (MAT)

Held on : September 2021

Time : 2.5 hrs **(BASED ON MEMORY)** *Maximum Marks : 200*

SECTION-A : English Language

DIRECTIONS (Qs. 1-20) : *Read the passages given below to answer the questions that follow.*

Passage-1

The cabinet recently approved the Code on Wages Bill, which proposes to make minimum wages a statutory right for all citizens. The Bill, which was tabled in the Parliament in the monsoon session, proposes a monthly minimum wage to be set across India, which will be binding on all the states. Once it is passed, the states cannot set a minimum wage lower than the one set by the Central Government. The proposed Code on Wages will subsume four extant Acts: the Minimum Wages Act of 1948, the Payment of Wages Act of 1936, the Payment of Bonus Act of 1965 and the Equal Remuneration Act of 1976.

Enacting labour reforms is always a herculean task and successive governments have shied away from it. Even the great wave of liberalisation of 1991 did not include any factor market reforms. The proposed wge code Bill is the first serious venture in labour law reform by the current government.

Though the actual minimum wage is yet to be set by the Central Government, there are indications that it will be significantly higher than the current wage rate. This will invariably result in either retrenchment of employees or a significant slowdown in new hiring or both. Economic theory suggests that a price floor, such as a minimum wage, which mandates how low a price can be set, always results in excess supply of that good or service. Seminal work by Nobel Prize winning economist George Stigler concludes that a minimum wage does not satisfy its original intentions elimination of poverty-and will tend to increase unemployment and reduce family income.

1. Which of the following is true about the Code on Wages Bill?
   (a) The Bill was tabled in the budget session of the Parliament.
   (b) It aims at setting a monthly minimum wage which will differ for different regions.
   (c) The states would not be able to set a minimum wage that is less than 70% of what the code suggests.
   (d) The proposed Code on Wages will merge 4 existing Acts.
2. Successive governments have shield away from enacting labour reforms because
   (a) Reforms were not initiated at the time of liberalisation in 1991.
   (b) The issue is a huge task and also highly complicated.
   (c) The government did not consider the issue to be so serious.
   (d) The government was busy in poverty removal and employment generation.
3. As per the passage, what are some possible effects of implementing a minimum wage rate?
   (a) It would lead to a significant increase in employment.
   (b) It could lead to increase in family income and reduction in poverty levels.
   (c) It would increase the supply of workers in the market.
   (d) All of the above.
4. Which of the following is true in the context of the passage ?
   I. As per the bill, states would have to set a minimum wage either equal to or more than the one set by the centre.
   II. The proposed wage code bill is the fifth of its kind reform enacted by the currrent government.
   III. The implementation of a minimum wage rate would probably lead to a slowdown in hiring.
   (a) Only III (b) Only I and III
   (c) Only I and II (d) Only II and III

Passage-2

The "who's who" of universities and research institutions published by the Human Resource Development Ministry, as the National Institutional Ranking Framework, 2018, should be viewed mainly as a proposition that data makes it possible to assign objective credentials to some aspects of education. Its assessment of some of the top institutions such as the Indian Institute of Science, the Jawaharlal Nehru University, the IITs and the IIMs is unsurprising, given their record of research, peer-reviewed publications and outcomes for graduates.

Even among the 3,954 institutions that participated, there is a clear skew towards suthern, southeastern and western India. Participation levels are inadequate: there were 40,026 colleges and 11,669 standalone institutions according to the HRD Ministry's All India Survey on Higher Education for 2016-17.

To the faculty and students in many colleges, what matters is the vision of the administrative leaders and a commitment to excellence. The governing bodies should make available adequate financial and academic resources to colleges, particularly the younger ones, to help them improve performance. These are measured by the NIRF in terms of the percentage of faculty with doctoral degrees, papers published in credentialed journals, inclusivity and diversity of students, and median salaries for the graduates.

5. According to the first paragraph, what does the author mean when he refers to the universities and institutions as "who's who" ?
   (a) He is trying to understand 'who' the list prepared by NIRF consists of.
   (b) He is referring to the top institutions-among all institutions mentioned in the list prepared by NIRF.
   (c) He is asking the reader to fathom 'who' developed the list and the reasons behind it.
   (d) Both (b) and (c).
6. There is skew towards which region/regions in terms of participation ?
   I. North region
   II. North-eastern region
   III. Western region
   IV. South-eastern region
   (a) Only III and IV (b) Only I
   (c) Only II and III (d) Only IV
7. Which of the following parameters matter to faculty and students when determining the worth of an institution?
   (a) The vision of its leaders
   (b) The frequency of pay hikes
   (c) The availability of adequate academic resources
   (d) The perks the institutions will provide them with
8. According to the passage, which of the following parameters is/are used by NIRF to judge institutions for ranking them ?
   (a) Papers published in reputed journals
   (b) Number of highly qualified faculty
   (c) Diversity in terms of students
   (d) All of the above

Passage-3

India is considering inviting expressions of interest to sell Air India Ltd by the end of next month as the government aims to complete the transaction this year, people with knowledge of the matter said.

"The government will conduct road shows, as well as, be open to meet prospective buyers even before the expressions of interest are sought", the people said, declining to be identified as the discussions are private. "The process will likely allow the bidders to look at the accounts of the airline except for some portions that are confidential and also see the share purchase agreement," they said without providing details.

"The potential bidders will have the option to make suggestions for changes in the sale terms during the process of expressing their interest in the deal," the people said. The government is looking to sell its entire stake in the carrier, they said.

DS Malik, a spokesman of the Ministry of Finance, did not immediately answer two calls made to his mobile phone. Dhananjay Kumar, a spokesman of Air India, declined to comment.

The plan is being prepared after the government's attempt to partially exit the carrier failed to attract any bidder last year. In her budget presentation for the current financial year, Finance Minister Nirmala Sitharaman said that the government will receive plans to sell Air India and the divestment would be part of the government's efforts to raise ₹ 1,05,000 crore ($ 15.3 billion) selling stakes in state-run companies.

Air India, which is surviving on a ₹ 30,000 crore tax payer- funded bailout, has failed to maintain its market dominance as a slew of carriers including Inter Global Aviation Ltd and Spice Jet Ltd started to offer ultra-cheap, on-time flights more than a decade ago. The state-run airline has total debts of $ 8.4 billion and posted losses of more than ₹ 7,600 crore last year, according to provisional estimates.

9. Which among the following has been given as the main reason for the present situation of Air India in the passage ?
   (a) Air India does not have enough money to survive in the long run though it is trying to find out.
   (b) Air India has lost all the deposit it had received from the government last year.
   (c) Air India is in the process of earning deposits from the depositors and investors so that they are worried about the stake sale.
   (d) Air India has got competition from other airlines and it has simply failed to live up to the same.
10. Which of the following is NOT a liberty given to the prospective buyers of Air India?
   (a) They will not get to understand the financial structure of the company before giving the money to the government.
   (b) They will not get to see the bank account details of the company before depositing the money.
   (c) They will not get to look at all the finances of the company while making an offer for the airline.
   (d) They will not have to share anything with the government regarding their own financial status.
11. What is the target set by the government from disinvestment in the state-run companies of the country as per the Union Budget?
   (a) ₹ 105000 crores (b) ₹ 100000 crores
   (c) ₹ 200000 crores (d) ₹ 205000 crores
12. Which of the following is correct regarding the financial condition of Air India?
   (a) Air India has posted loss of ₹ 7500 crores in the last couple of financial years put together.
   (b) Air India has posted losses of more than ₹ 7600 crores in the last financial year as published by it.
   (c) Air India has not published the financial results in the last year due to some restriction from the government.
   (d) Air India is yet to understand the gravity of the financial situation in the cuntry because of its financial burden.

Passage-4

With the successful pre-dawn lunch of RISAT-2B satellite, the Indian Space Research Organisation (ISRO) has added another feather to its cap. The satellite will enhance India's capability in

crop monitoring during the monsoon season, forestry mapping for forest fires and deforestation and flood mapping as part of the national disaster management programme.

Given that overcast skies are a constant during the monsoon season and during times of flood, the ability to penetrate the cloud cover is essential. While optical remote sensing that relies on visible light for imaging gets obstructed by clouds, RISAT-2B will not. Much like the RISAT-1 satellite that was launched by ISRO in April 2012, RISAT-2B will also use microwave radiation.

Unlike visible light, microwaves have longer wavelength and so will not be susceptible to atmospheric scattering. Microwave radiation can thus easily pass through the cloud cover, haze and dust, and image the ground. Hence, RISAT-2B satellite will be able to image under almost all weather and environmental conditions. Since it does not rely on visible light for imaging, it will be able to image the ground during both day and night.

The satellite does not have passive microwave sensors that detect the radiation naturally emitted by the atmosphere or reflected by objects on the ground. Instead, RISAT-2B will be transmitting hundreds of microwave pulses each second towards the ground and receiving the signals reflected by the objects using radar.

The moisture and texture of the object will determine the strength of the microwave signals that gets reflected. While the strength of the reflected signal will help determine different targets, the time between the transmitted and reflected signals will help determine the distance to the object.

13. As per the given passage, how RISAT-2B satellite will image in the cloudy weather ?
    I. With the help of its microwave radiation that can pass through cloud cover and dust easily.
    II. With the help of visible light that creates images.
    III. With the help of electronic rays that creates image of an object.
    (a) Only I (b) Only II
    (c) Only II and III (d) Only I and II
14. What is the transmission rate of RISAT-2B ?
    (a) 100 microwave pulse/second approx.
    (b) 1000 microwave pulse/second approx.
    (c) 10000 microwave pulse/second approx.
    (d) 10 microwave pulse/second approx.
15. Which of the following is true in context of the passage ?
    (a) RISAT-1 uses visible light technology to create images.
    (b) RISAT-2 is helpful in flood mapping and crop monitoring.
    (c) The passive microwave sensors of RISAT-2 detect the radiation
    (d) RISAT-1 was launched by ISRO in April 2021.
16. What does the writer want to convey with the line given below ?
    "The Indian Space Research Organisation (ISRO) has added another feather to its cap."
    (a) ISRO has worked hard on building its rapport among the other space research organisations of the world.
    (b) ISRO's achievements challenge all the other space research organisations of the world.
    (c) ISRO has made an accomplishment that made nation proud on it.
    (d) ISRO has become the apex space research institute of the world.

Passage 5

Global estimates published by the World Health Organisation (WHO) indicate that 1 in 3 (35%) women worldwide have experienced either physical and/or sexual intimate partner violence or non-partner sexual violence in their lifetime.

Worldwide as many as 38% of murders of women are committed by a made intimate partner. What makes this worse for countries like India is the fact that intimate partner violence is the highest at 37.7% in the WHO South-East Asia region.

As per figures released by WHO, the violence ranges from 23.2% in high-income countries and 24.6% in the WHO Western Pacific region to 37% in the WHO Eastern Mediterranean region. "Violence against women – particularly intimate partner violence and sexual violence – is a major public health problem and a violation of women's human rights. WHO together with UN women and other partners has developed a framework for prevention of violence against women called Respect which can be used by governments to counter this menance", noted WHO.

Meanwhile, healthcare professional cautioned that violence can negatively affect a woman's physical, mental, sexual, and reproductive health, and may increase the risk of acquiring HIV in some settings.

Explaining how gender-based violence is perpetrated, the global health organisation said that men are more likely to perpetrate violence if they have low education, a history of child maltreatment, exposure to domestic violence against their mothers, harmful use of alcohol, unequal gende norms, including attitudes accepting of violence and a sense of entitlement over women.

Women are more likely to experience intimate partner violence if they have low education, exposure to mothers being abused by a partner, abuse, during childhood, and attitudes accepting violence, male privilege and women's subordinate status.

Warning that intimate partner violence causes serious short and long-term problems for women and adversely affects their children besides leading to high social and economic costs for women, their families and societies, WHO said: "There is now evidence that advocacy and empowerment counselling interventions, as well as home visitation are promising in preventing or reducing intimate partner violence against women."

17. Which among the following is the main issue for women as highlighted in the information given in the passage?
    (a) Women have to go through a lot of hardships during pregnancy and that should be taken care of.
    (b) The government is not serious about providing shelter to homeless women especially in the under developed countries.

(c) The developing nations are yet to understand the problem of having too much male population.
(d) Women face a lot of events of violence in their intimate and sexual lives especially in the developing countries.

18. According to the passage, which among the following can be considered as a reason why men indulge in violence against women?
(a) They have such upbringing where they must have observed their family members doiong so.
(b) Lack of education leads them to not comprehend the adverse effects of such actions.
(c) They have faced violence in their childhood.
(d) All of the above

19. Which among the following correctly defines the position of India in the context of violence against women, as stated in the passage ?
(a) India is far better than the developed countries where the rate of such crimes is increasing day by day.
(b) India is at par with all the other countries of the world given the fact that it is same for women everywhere.
(c) India is worse than most of the developed countries since the incidents of violence against women are more in the South Asian region of the world.
(d) The WHO has not given any status report typical to India and its neighbouring countries making it impossible to understand the Indian context.

20. Which of the following is correct regarding the action taken by WHO to address the violence against women in various countries?
(a) WHO has made the data public and has urged all the government agencies to take due care of their women in the future.
(b) WHO has moved the International Court of Justice on behalf of the women who are suffering day in and day out.
(c) WHO has not done anything to save the women from the troubles as mentioned in the report.
(d) WHO has floated a platform called Respect along with other agencies to address the issue of violence against women.

DIRECTIONS (Qs. 21-23): *Fill in the blanks with appropriate words.*

21. The ..... nature of speech does not permit editing of the speech signal.
(a) Permanence (b) Transient
(c) Indulgence (d) Circular

22. You're deliberately ..... . Even your choice of clothes is a/an ..... of your non-conformity.
(a) Unconventional, statement
(b) Statement, unconventional
(c) Conforming, unconstitutional
(d) Unconstitutional, conforming

23. The head chef at the ..... seafood restaurant is viewed as a lobster ..... .
(a) infamous, connoisseu (b) popular, connoisseur
(c) famous, philanthropist (d) notorious , philanthropist

DIRECTIONS (Qs. 24-25): *Choose the alternatives that can replace the given words/sentence.*

24. Fear of confined spaces
(a) Agoraphobia (b) Enochlophobia
(c) Claustrophobia (d) Stasiphobia

25. A speech without any previous preparation
(a) Elocution (b) Dialect
(c) Dialogue (d) Extempore

DIRECTIONS (Qs. 26-28): *Select the most appropriate meaning of the given idiom/phrase.*

26. A close fisted man
(a) Very angry (b) Very rich
(c) A miser (d) A big spender

27. The tip of the iceberg
(a) To make a big deal of small things
(b) A small part of a bigger problem
(c) In good and bad times
(d) To give up

28. Beat a dead horse
(a) Having to start all over again
(b) Between two dangers
(c) To force an issue that has already ended
(d) Willing to do anything to help

DIRECTIONS (Qs. 29-31): *Choose the order of the sentences marked A, B, C, D and E to form a logical paragraph.*

29. A. Miss Sullivan arrived at the Keller home when Helen was seven.
B. At times the teacher became frustrated.
C. But, eventually, Miss Sullivan's effort was rewarded.
D. Before Helen Keller was two years old, she lost her sight and her hearing.
E. Miss Sullivan worked closely with Helen, her new student.
(a) DEBAC (b) DAEBC
(c) ACDEB (d) CDABE

30. A. The knowledge so far available about the endocrine glands is very limited.
B. Nature has provided the body with proper regulators and protectors.
C. These are our endocrine glands.
D. And so the proper functioning of these controllers of our body is very important and most vital for health.
E. However, all the medical sciences have accepted the fact that these endocrine glands secrete thousands of different types of hormones directly into our blood.
(a) ADBEC (b) DEABC
(c) CDEAB (d) BDCAE

31. A. Modern science has produced some good drugs for these ailments.
B. Heart ailments are very common these days.
C. So I always prefer taking milk these days as it contains no fat.
D. But this can also be prevented by taking fatless food.
E. That is why people call this era as the age of heart troubles.
(a) BEADC (b) ABDCE
(c) DCABE (d) ECADB

DIRECTIONS (Qs. 32-34): *Against each word are given four suggested meanings. Choose the word or phrase which is opposite in meaning to the key word.*

32. Demure
(a) Humble (b) Bold
(c) Coy (d) Sober

33. Nefarious
(a) Wicked (b) Monstrous
(c) Virtuous (d) Atrocious

34. Knave
(a) Scoundrel (b) Rogue
(c) Charlatan (d) Altruist

DIRECTIONS (Qs. 35-37): *Against each key word are given four suggested meanings. Choose the word or phrase which is similar in meaning to the key word.*

35. Splayed
(a) Nimble (b) Jade
(c) Frayed (d) Spread

36. Jubilant
(a) Airy (b) Enlivening
(c) Ecstatic (d) Buoyant

37. Blister
(a) Sanguine (b) Chipper
(c) Contented (d) Wound

DIRECTIONS (Qs. 38-40): *Each sentence given below is divided into three parts labeled as (a), (b) and (c). One of these three parts may contain an error. If the error is in the part labeled as (a), then that is your answer. If you think that there are no errors, then mark (d) as your answer.*

38. Sluggish rural wages and sub-normal performance (a)/of the sector refers scibdued (b)/non-farm rural activity and income (c)/No error (d).

39. Not only has the Director (a)/made a good impression, but increased (b)/the motivation of the workers. (c)/No error (d).

40. Autumn is the driest season, winter receives less precipitation (a)/than summer, yet the weather patterns in Switzerland (b)/are not in a stable climate pattern. (c)/No error (d).

SECTION-B : Intelligence & Critical Reasoning

DIRECTIONS (Qs. 41-43): *Each of these questions has a statement followed by two Conclusions* I *and* II. *Consider the statement and the following conclusion. Decide which of the conclusions follows from the statement mark answer as.*

(a) if Conclusion I follows
(b) if Conclusion II follows
(c) if neither Conclusion I nor II follows
(d) if both Conclusions I and II follow

41. **Statement:** Company staff highly motivated when they get sense of involvement by participating in the management of companies.
Conclusions:
I. Company staff should be motivated to produce more
II. Company staff should be allowed to participate in the management of companies.

42. **Statement:** Power consumption in every house has been doubled during the last five years.
Conclusions:
I. There is a lot of development in the society.
II. Power rates have become cheaper.

43. **Statement:** This world is neither good nor evil; each person makes a world for himself.
Conclusions:
I. Some people find this world quite good.
II. Some people find this world quite bad.

44. The last day of a century cannot be either
I. Tuesday II. Thursday
III. Saturday IV. Sunday
(a) I and II (b) I and IV
(c) I, II and III (d) I, III and IV

DIRECTIONS (Qs. 45-47): *Read the following information to answer these questions.*

There are six books/volumes kept in a steel rack/shelf and are labelled as O, N, M, L, K and J. N, K, M and J have blue covers while others have red covers. O, N and L are new volumes while the rest are old volumes. O, N and M are law books while the rest are engineering books.

45. Which two volumes are old engineering books having blue covers ?
(a) K and M (b) K and L
(c) K and J (d) J and O

46. Which new volume engineering book has a red cover ?
(a) O (b) L
(c) J (d) K

47. Which new volume law books has a blue cover ?
(a) K (b) M
(c) O (d) N

48. Five persons are living in a multistoried building. Mr. M lives in a flat above
Mr. A, Mr L lives in a flat below
Mr. G, Mr. A lives in a flat above
Mr. G and Mr. R lives in a flat below Mr. L Who lives in the top most flat ?
(a) Mr. L (b) Mr. G
(c) Mr. M (d) Mr. R

DIRECTIONS (Qs. 49-51): *In each of these questions, two Statements I and II are given. These may have a cause and effect relationship or may have independent causes or be the effects of independent causes. Read the statements and mark answer as*

(a) if Statement I is the cause and Statement II is its effect
(b) if Statement II is the cause and Statement I is its effect
(c) if both the Statements I and II are effects of independent causes
(d) if both the Statements I and II are effects of some common cause.

49. **Statements:**
I. International Agency for Reserarch on Cancer (IARC) – a Part of the world health organisation (WHO) – will meet in France to take a call on bitumen, the black, oily material used to make roads – to be branded as probably carcenogenic, i.e. causing cancer to humans.
II. IARC has asked experts from across the globe to submit data from their research studies conducted on bitumen so as to help it to come to some conclusion.

50. **Statements:**
I. In a survey conducted recently in Canada, almost 70% of people said they find it esier to care for their cars than their personal health, 40% of them said they would be more likely to address their issues with their car than their health.
II. Based on the above survey, the national campaign network for men's health launched this awareness through Abbott Laboratories to encourage men to visit their doctors more often to enjoy better health.

51. **Statements:**
I. The local co-operative credit society has decided to cease giving loans to farmers with immediate effect.
II. A large number of credit society members have withdrawn major parts of their deposits from the credit society.

DIRECTIONS (Qs. 52-54): *Each of these questions has a statement followed by two Conclusions* I *and* II. *Consider the statement and the following conclusions. Decide which of the conclusions follows from the statement. Mark answer as*

(a) if Conclusion I follows
(b) if Conclusion II follows
(c) if either Conclusion I or II follows
(d) if neither Conclusion I nor II follows

52. **Statement:** Parents are prepared to pay any price for a higher education to their children.
Conclusions:
I. All parents these days are very well off.
II. Parents have an obsessive passion for a perfect development of their children through good schooling.

53. **Statement:** I know nothing except the fact of my ignorance.
Conclusions
I. Writer's knowledge is very poor.
II. The world of knowledge is too vast to be explored by a single person.

54. **Statement:** Quality has a price tag. India is allocating lots of funds to education.
Conclusions:
I. Quality of education in India would improve soon.
II. Funding alone an enhance quality of education.

DIRECTIONS (Qs. 55-57): *Each of these questions consists of a pair of words bearing a certain relationship. From amongst the alternatives, pick up the pair that best illustrates a similar relationship.*

55. Happy : Sad
(a) Dawn : Twilight (b) Noon : Midnight
(c) Morning : Night (d) Energetic : Lazy

56. River : Ocean
(a) Child : School (b) Book : Library
(c) Lane : Road (d) Cloth : Body

57. Cap : Head
(a) Neck : Collar
(b) Tie : Shirt
(c) Socks : Feet
(d) Coat : Pocket

58. If 27 March, 1995 was a Monday, then what day of the week was 1 November, 1994 ?
(a) Sunday (b) Monday
(c) Tuesday (d) Wednesday

DIRECTIONS (Qs. 59-61): *Read the following information to answer these questions.*

There are six employees sitting in a competitive examination, namely P, O, N, M, L and K. P and O are from Dehradun while N, M, L and K are from Mangalore. M and K are tall while rest are short. O, L and K are males while rest of them are females.

59. Who is the tall female from Mangalore ?
(a) N (b) K
(c) L (d) M

60. Who is the short female from Dehradun ?
(a) N (b) O
(c) P (d) M

61. Who is the tall male from Mangalore ?
(a) L (b) K
(c) N (d) M

62. In a family there are seven persons, comprising two married couples, G is the son of N and the grandson of P. N is a widower. N and I are brothers and D is the daughter-in-law of Q, who is the mother of I and the grandmother of 'W'. How is W related to N?
(a) Son (b) Son-in-law
(c) Nephew or Nice (d) Brother

63. G, H and I are three brothers. G's son J is married to P and they have one child Ram blessed to them. N the son of H is married to S and this couple is blessed with a daughter Mona. I has a daughter M, who is married to K. This couple has one daughter Karishma born to them. How is Mona related to H?
(a) Daughter (b) Niece
(c) Granddaughter (d) None of these

DIRECTIONS (Qs. 64-66): *Read the following information to answer these questions.*

R, K, A and J are good friends studying in a school. Three of them stay away from the school and one stays nearer to it.Two study in class IV, one in class V and one in class VI. They study Hindi, Maths, Social Science and Science. One of these four friends is good at all the four subjects while another is weak in all the four subjects. R stays away from the school and is good at Maths only while K is weak in Maths only and stays close to the school. Neither of these two study in clas V or VI. One who is good at all the subjects is studying in class V. A is not studying in class VI.

64. Name the boy who is good in all the subjects
(a) K (b) J
(c) A (d) R

65. Name the boy who is weak in all the subjects.
(a) R (b) K
(c) J (d) A

66. Which two boys are good at Mathematics ?
(a) J and K (b) K and A
(c) R and A (d) R and J

DIRECTIONS (Qs. 67-69): *Read the following information to answer these questions.*

Threre are six students L, M, N, O, P and Q. Q and P belong to Bihar and the rest belong to Jharkhand. N and L are tall while other students are short. Q, O and N are identified by wearing jeans while others indentified by wearing caps.

67. Which two students are not wearing jeans and are short ?
(a) O and M (b) P and N
(c) Q and M (d) P and L

68. Which short student of Jharkhand is weaning a cap?
(a) L (b) O
(c) N (d) M

69. Which tall students of Jharkhand is wearing jeans ?
(a) L (b) M
(c) N (d) O

70. There are five books V, W, X, Y and Z. Book X lies above W. Book V is below Z, W is above Z, Y is below V. Which book is at the bottom ?
(a) V (b) Y
(c) Z (d) X

DIRECTIONS (Qs. 71-74): *Complete the series by replacing the '?'.*

71. BD3FH, AC5EG, JL7NP, ?
(a) IK9MO (b) IK11MO
(c) IK13MO (d) 1K17MO

72. AB 11 CD, EF 13 GH, 1J 17 KL, ?
(a) MN 18 OP (b) MN 19 OP
(c) MN 21 OP (d) MN 23 OP

73. X24C3, V22E5, T20G7, ?
(a) R16I7 (b) R17I9
(a) R18I9 (b) R19I10

74. Y4X9, W16V25, ?, S64R81
(a) U39T49 (b) U36T49
(a) U32T48 (b) U36T46

DIRECTIONS (Qs. 75-78): *In the questions given below, there are two statements labelled as Assertion (A) and Reason (R).In the context of the two statements, which are one of the following is correct.*

(a) Both 'A' and 'R' are true and 'R' is the correct explanation of 'A'.
(b) Both 'A' and 'R' are true but 'R' is not correct explanation of 'A'.
(c) 'A' is true but 'R' is false.
(d) 'A' is false but 'R' is true.

75. **Assertion (A) :** Copper is used to make electrical wires.
Reason (R) : Copper is a good conductor of electricity.

76. **Assertion (A) :** India is a democracy.
Reason (R) : People elect their own representatives who form the government.

77. **Assertion (A) :** India celebrates its Independence day on 15th August.
Reason (R) : India became independent on 15th August 1947.

78. **Assertion (A) :** In India 2nd October is observed as 'Martyr's Day'.
Reason (R) : Pt. Nehru was the first Prime Minister of India.

79. Five students participated in the scholarship examination C scored higher than E. B scored lower than A but higher than C. D scored between E and C. Who scored lowest in the examination ?
(a) B (b) E
(c) D (d) C

80. A one-rupee coin is placed on a plain paper. How many coins of the same size can be placed around it so that each one touches the central and adjacent coins.
(a) 4 (b) 3
(c) 7 (d) 6

SECTION-C : Mathematical Skills

81. A booster pump can be used for filling as-well-as for emptying a tank. The capacity of the tank is 2400 m^3. The emptying capacity of the tank is 10 m^3/min higher than its filling capacity and the pump needs 8 min lesser to empty the tank than it needs to fill it. What is the filling capacity of the pump ?
(a) 60 m^3/min (b) 50 m^3/min
(c) 72 m^3/min (d) None of these

82. A boat travels upstream from B to A and downstream from A to B in 3 h. If the speed of the boat in still water is 9 km/h and the speed of the current is 3 km/h, what is the distance between A and B ?
(a) 6 km (b) 4 km
(c) 8 km (d) 12 km

83. A cistern, open at the top, is to be lined with sheet lead which weights 27 kg/m^3. The cistern is 4.5 m long and 3 m wide and holds 50 m^3. The weight of lead required is
(a) 1764.60 kg (b) 1864.62 kg
(c) 1660.62 kg (d) 1860.62 kg

84. There are two bags, one of which contains 3 black and 4 white balls, while the other contains 4 black and 3 white balls. A dice is cast. If the face 1 or 3 turns up, a ball is taken from the first bag and if any other face turns up a ball is chosen from the second bag. The probability of choosing a black ball is
(a) $\frac{11}{21}$ (b) $\frac{10}{21}$
(c) $\frac{12}{21}$ (d) $\frac{9}{21}$

85. The present worth of a bill due 7 months hence is ₹ 1200. If the bill were due at the end of $2\frac{1}{2}$ year, its present worth would be ₹ 1016. What is the rate per cent of the bill?
(a) 8% (b) 10%
(c) 16% (d) 18%

86. If the ages of P and R are added to twice the age of Q, the total becomes 59. If the ages of Q and R are added to thrice the age of P, the total becomes 68 and if the age of P is added to thrice the age of Q and thrice the age of R, the total becomes 108. What is the age of P ?
(a) 19 year (b) 15 year
(c) 17 year (d) 12 year

87. Two coal loading machines, each working 12 h per day for 8 days, handle 9000 tonne of coal with an efficiency of 90%, while 3 other coal loading machines at an efficiency of 80% are set to handle 12000 tonne of coal in 6 days. How many hours per day should each machine work ?
(a) 18 h per day (b) 16 h per day
(c) 20 h per day (d) 14 h per day

88. If 6 year are subtracted from the present age of Shyam and the remainder is divided by 18, then the present age of his grandson Anup is obtained. If Anup is 2 year younger to Mahesh whose age is 5 year, then what is the age of Shyam ?
(a) 48 year (b) 60 year
(c) 84 year (d) 96 year

89. There are two concentric circular tracks of radii 100 m and 102 m, respectively. A runs on the inner track and goes once round the track in 1 min 30 s, while B runs on the outer track in 1 min 32 s. Who runs faster ?
(a) A (b) B
(c) Cannot be determined (d) None of these

90. Suppose that a maximum of 25 gm of salt dissolves in 100 gm of water. Any more salt, if added, remains undissolved and a sediment falls at the bottom. Now, water is evaporated from 1 kg of 4% solution at the rate of 28 gm per hour. After how long will it start sedimenting, approximately ?
(a) 29 h (b) 31 h
(c) 35 h (d) 23 h

91. A student purchased a computer system and a colour printer. If he sold the computer system at 10% loss and the colour printer at 20% gain, he would not lose anything. But if he sells the computer system at 5% gain and the colour printer at 15% loss, he would lose ₹ 800 in the bargain. How much did he pay for the colour printer ?
(a) ₹16000 (b) ₹8000
(c) ₹9000 (d) ₹5334

92. Out of 20 consecutive positive integers, two are chosen at random. The probability that their sum is odd is
(a) $\frac{10}{19}$ (b) $\frac{1}{20}$
(c) $\frac{19}{20}$ (d) $\frac{9}{20}$

93. At a point on level ground, the angle of elevation of a vertical tower is found to be such that its tangent is $\frac{5}{12}$. On walking 192 m towards the tower, the tangent of the angle of elevation is $\frac{3}{4}$. The height of the tower is
(a) 96 m (b) 150 m
(c) 180 m (d) 226 m

94. Out of the total production of iron from hematite, an ore of iron, 20% of the ore gets wasted. Out of the remaining iron, only 25% is pure iron. If the pure iron obtained in a year from a mine of hematite was 80000 kg, then the quantity of hematite mined in the years is
(a) 400000 kg (b) 500000 kg
(c) 450000 kg (d) 600000 kg

95. A sum of money is accumulating at compound interest at a certain rate of interest. If simple interest instead of compound were reckoned, the interest for the first two years would be diminished by ₹ 20 and that for the first three years, by 61. What is the sum ?
(a) ₹7500 (b) ₹7000
(c) ₹8000 (d) ₹6500

96. A manufacturer of a certain item can sell all he can produce at the selling price of ₹ 60 each. It cost him ₹ 40 in materials and labour to produce each item and he has overhead expenses of ₹ 3000 per week in order to operate that plant. The number of units he should produce and sell in order to make a profit of at least ₹ 1000 per week is
(a) 300 (b) 400
(c) 250 (d) 200

97. A man covers a certain distance on a toy train. If the train moved 4 km/h faster, it would take 30 min less. If it moved 2 km/h slower, it would have taken 20 min more. What is the distance covered ?
(a) 65 km (b) 60 km
(c) 70 km (d) 75 km

98. A jar full of milk contains 40% water. A part of this milk is replaced by another containing 19% water and now the percentage of water is found to be 26%. The quantity of milk replaced is
(a) $\frac{2}{3}$ (b) $\frac{1}{3}$
(c) $\frac{3}{7}$ (d) $\frac{4}{7}$

99. The average age of all the students of a class is 18 year. The average age of boys of the class is 20 year and that of the girls is 15 year. If the number of girls in the class is 20, then what is the number of boys in the class ?
(a) 30 (b) 15
(c) 45 (d) 50

100. Two trains, 330 and 110 m long, are going in the same direction. The faster train takes one minute to pass the other completely. If they are moving in opposite directions, they pass each other completely in 3 sec. What is the speed of the faster train ?
(a) 42 m/s (b) 38 m/s
(c) 46 m/s (d) 50 m/s

101. There are three pipes, A, B and C, opening into a tank. Each pipe can be used to fill or empty the tank at the same respective rate. The ratio of the rates of the three pipes at, which they either fill or empty the tank is 2 : 3 : 4. Pipes A and B, working together, take 3 h to fill the tank when both are used as inlet pipes. In the first, second and third hours of operation, the pipes, A, B and C respectively are used as emptying pipes, while the other two pipes are used as filling pipes. What is the fraction of the tank to be filled at the end of the three hours ?
(a) $\frac{1}{5}$ (b) $\frac{3}{5}$
(c) $\frac{2}{5}$ (d) $\frac{4}{5}$

102. Pipe A can fill an empty tank in 30 h while pipe B can fill it in 45 h. Pipe A and B are opened and closed alternatively, i.e., first pipe A is opened then B, again A and then B and so on for 1 h each time without any time lapse. In how many hours will the tank be filled when it was empty initially ?
(a) 36 h (b) 54 h
(c) 48 h (d) 60 h

103. Vidya leaves the studio every day at 6.00 p.m. to meet Salman at 7.00 p.m. at point X stopping anywhere along the way. One day she left the studio at the usual time i.e. 6.00 p.m. and travelled the first half of the distance at $\frac{3}{4}$ th of her original speed. At what speed must she travel the second half of the distance to reach the point X on time ?
(a) At $\frac{3}{2}$ times of her usual speed
(b) At 2 times of her usual speed
(c) At $\frac{1}{6}$ times of her usual speed
(d) None of the above

104. A, B and C are running on a circular track of 120 m at a speed of 5 m/s, 8 m/s and 10 m/s respectively. A, B and C all three are moving in the same direction. Which will all the three meet again at the starting point ?
(a) After 55 sec (b) After 2 min
(c) After 5 min (d) After 40 sec

105. If Sanjit walks to school and rides his bicycle back home, it takes him 90 min. If he rides his bicycle both ways it takes him 30 min. How many hours would it take him to make the trip to school and back by walking, assuming that he walks at a constant speed and that he cycles at a constant speed ?
(a) 2 h (b) 2.5 h
(c) 3 h (d) 3.5 h

106. A and B can complete a task in 30 days when working together. After A and B have been working together for 11 days, B is called away and A completes the remaining task in the next 28 days. Had A been working alone, the number of days taken by him to complete the task would have been
(a) $33\frac{1}{19}$ days (b) $19\frac{6}{25}$ days
(c) $44\frac{4}{19}$ day (d) $33\frac{7}{19}$ days

107. A vendor sells 60% of apples, he had and throws away 15% of the remainder. Next day he sells 50% of the remainder and throws away the rest. What per cent of his apples does the vendor throw ?
(a) 17% (b) 23%
(c) 42% (d) 15%

108. The ratio of efficiency of A is to C is 5 : 3. The ratio of number of days taken by B is to C is 2 : 3. A takes 6 days less than C, when A and C complete the work individually. B and C started the work individually, B and C started the work and left after 2 days. The number of days taken by A to finish the remaining work is
(a) 4.5 days (b) 5 days
(c) 6 days (d) $9\frac{1}{3}$ days

109. Two teams participating in a competition had to take a test in a given time. Team B choose the easier test with 300 questions, and team A choose the difficult test with 10% less questions. Team A completed the test 3 h before schedule while team B completed it 6 h before schedule. If team B answered 7 questions more than team A per hour, how many questions did team A answer per hour ?
(a) 15 (b) 18
(c) 21 (d) 24

110. 900 kg of mortar consists of 45% sand, 144 kg of line and the rest cement. What percentage of cement is there in mortar ?
(a) 27% (b) 45%
(c) 39% (d) 21%

111. Harris invested ₹ 40000 in two different ventures A and B. The yearly return on B was 12% and the yearly return on A was 8%. If the total return was ₹ 4000, how much did Harris invest in B ?
(a) ₹ 8000 (b) ₹ 20000
(c) ₹ 14000 (d) ₹ 22000

112. In a competition A, B and C are participating. The probability that A wins is twice that of B, the probability that B wins is twice that of C. The probability that A loses is
(a) $\frac{1}{7}$ (b) $\frac{2}{7}$
(c) $\frac{4}{7}$ (d) $\frac{3}{7}$

113. A point is selected at random from the interior of a circle. The probability that the point is closer to the centre than the boundary of the circle is
(a) $\frac{3}{4}$ (b) $\frac{1}{2}$
(c) $\frac{1}{4}$ (d) None of these

114. A two-wheeled carriage, whose axle tree is 1.22 m long, is driven around a circle the outer wheel makes $1\frac{1}{2}$ revolutions for every 1 revolution of inner wheel. The wheels are each 0.9 m high. What is the circumference of the circle described by the outer wheel ?
(a) 20m (b) 23 m
(c) 30m (d) 32 m

115. The simple interest on a sum of money is $\frac{1}{9}$ of the principal and the number of years is equal to the rate per cent per annum. The rate per cent per annum is
(a) 3% (b) 0.33%
(c) 3.33% (d) 2.3%

116. A and B quote for a tender. On the tender opening day, A realises that their quotes are in the ratio 7 : 4 and hence decreases its price during negotiations to make it ₹ 1 lakh lower than B's quoted price. B then realises that the final quotes of the two were in the ratio 3 : 4. What was the price at which B won the bid ?
(a) ₹ 7 lakhs
(b) ₹ 4 lakhs
(c) ₹ 3 lakhs
(d) ₹ 1 lakh

117. A student is studying for a test from 11 : 00 a.m. to 08 : 00 p.m. on weekdays and one-third of that time on Saturdays. On Sundays he takes a break from school and goes fishing. For what fractional part of the entire week is the student studying ?
(a) $\frac{2}{5}$ (b) $\frac{3}{7}$
(c) $\frac{2}{7}$ (d) $\frac{3}{8}$

118. The trunk of a tree is a right cylinder 1.5 m in radius and 10 m high. What is the volume of the timber which remains when the trunk is trimmed just enough to reduce it to a rectangular parallelopiped on a square base ?
(a) 25 m^3 (b) 12 m^3
(c) 45 m^3 (d) 14 m^3

119. Gopal has 73 L of wine in a drum. He replaces 3.65 L of it with water and keeps doing so till the time the concentration of wine is less than 85%. The minimum number of operations that Gopal has to perform is
(a) 3 (b) 4
(c) 2 (d) None of these

120. A student is to answer 10 out of 13 questions in an examination such that he must choose atleast 4 from the first five questions. The number of choices available to him is
(a) 346 (b) 140
(c) 196 (d) 280

SECTION-D : Data Analysis and Sufficiency

DIRECTIONS (Qs. 121-122): *Study the information to answer these questions.*

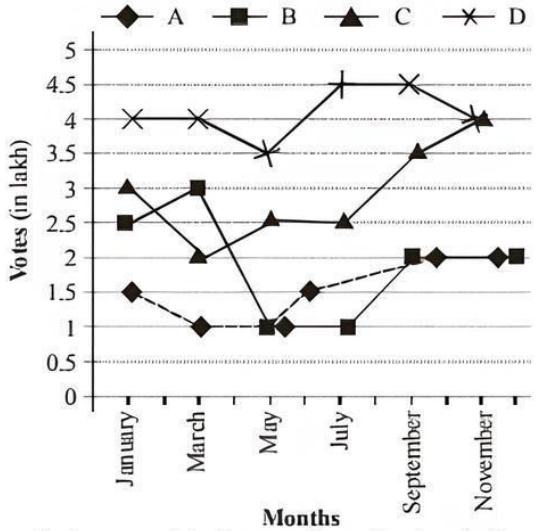
In a city there are modes of transport available *A*, *B*, *C*, *D*, *E* and *F* for commuting. Out of the total number of commuters commuting daily in the city, 17171 commute only by A. 7359 commute only by *B* and 22077 commute only by *C*. 14718 commute only by *D*, 4906 commute only by *E* and 7359 commute only by *F*. 26983 commute by *C* as well as *A*, 9812 commute by *E* as well as *A*, (Total number of commuters is 122650). Assume that there is no overlap between the commuters of different modes and their combination of transport.

121. The total number of commuters commuting by *A* form what per cent of the total number of commuters commuting daily ?
(a) 22 (b) 44
(c) 14 (d) 36

122. What is the difference in percentage of commuters commuting by *E* and that of *B* asnd *F* taken together ?
(a) 22 (b) 25
(c) 8 (d) 10

DIRECTIONS (Qs. 123-127): *Study the following graph to answer these questions.*

Opinion polls were conducted about the popularity of four IT companies *A*, *B*, *C* and *D*, in alternate months. All the people who participated in the opinion poll each month have definitely cast their vote in favour of any one of the four companies. The results are shown by the following line graph.



123. By what per cent is the number of votes in favour of *A* and *C*, taken together in January, May and September more/less than the total number of votes in favour of *B* and *D*, taken together in the remaining months ?
(a) 27% less (b) 37% less
(c) 18% more (d) None of these

124. What is the ratio of percentage decline in votes of *B* from January to May, to the perentage decline in votes of C from January to March ?
(a) 193 : 100 (b) 20 : 11
(c) 11 : 20 (d) 39 : 25

125. What per cent more votes are required by *A* to eqaual the total votes acquired by *D*, in the six months combined ?
(a) 150% (b) 133.33%
(c) 172% (d) 188%

126. In the month of July the votes of *D* and *C* are in the ratio 9 : 5. By what per cent should the votes of *C* increases so as to make the ratio 5 : 9, the votes of *D* remaining same ?
(a) 80% (b) 44.4%
(c) 144% (d) 224%

127. How many votes are needed by *A* and *B* together to get 7% more than *D* in September ?
(a) 271500
(b) 81500
(c) 200000
(d) 14000

DIRECTIONS (Qs. 128-130): *In each of these questions two quantities A and B are given. Compare the two quantities and mark answer as*

(a) if Quantity A is greater than Quantity B
(b) if Quantity B is greater than Quantity A
(c) if Quantities A and B are equal
(d) if comparison cannot be made

128. Suresh's salary, which is greater than ₹ 10000 is 75% of Sandra's salary. Dutt's salary is 80% of Suresh's salary.
A. Sandra's salary.
B. Dutt's salary.

129. The total surface area of a cube = 150.
A. The length of one edge of the cube.
B. 4.5

130. A merchant made a profit of ₹ 275 on the sale price of a sweater that cost the merchant ₹ 115.
A. The profit expressed as a percentage of the cost to the merchant.
B. The profit expressed as a percentage of the sale price.

DIRECTIONS (Qs. 131-135): *Each of these questions consists of a problem followed by two statements numbered as I and II. Decide whether the data in the statements are sufficient to answer the question.*

Mark answer as

(a) if Statement I alone is sufficient, but Statement II alone is not sufficient to answer the question.
(b) if Statement II alone is sufficient, but Statement I alone is not sufficient to answer the question.
(c) if both Statements taken together are sufficient to answer the question, but neither statement alone is sufficient.
(d) if Statements I and II together are not sufficient, and additional data is needed to answer the question.

131. A wheel of radius 2 m is turning at a constant speed. How many revolutions does it make in time T?
   I. $T = 20$ min.
   II. The speed at which a point on the circumference of the wheel is moving is 3 m per min.

132. Are the integers x, y and z consecutive ?
   I. The arithmetic mean (average) of x, y and z is y.
   II. $y - x = z - y$

133. A certain straight corridor has four doors in the order A, B, C and D. How far apart are doors B and C ?
   I. The distance between doors B and D is 10 m.
   II. The distance between A and C is 12 m.

134. Two socks are to be picked at random from a drawer containing only black and white socks. What is the probability that both are white ?
   I. The probability of the first sock being black is $\frac{1}{3}$.
   II. There are 24 white socks in the drawer.

135. A bucket was placed under a dripping tap which was dripping at a uniform rate. At what time was the bucket full ?
   I. The bucket was put in place at 2 p.m.
   II. The bucket was half full at 6 p.m. and three-quarters full at 8 p.m. on the same day.

DIRECTIONS (Qs. 136-140): *Study the table below to answer these questions.*

The following table shows the profit (in ₹ lakh) earned by 5 shops A, B, C, D and E during 2007-2012.

Shop	Year					
	2007	2008	2009	2010	2011	2012
A	4	6	8	7	5	10
B	3	5	6	4	7	8
C	9	11	8	7	10	12
D	5	4	6	3	7	3
E	6	7	5	5	7	8

Note Income = Profit + Investment

136. By what per cent is the profit earned by A in 2012 more than that in 2008 ?
   (a) 40% (b) 66.6%
   (c) 266% (d) 160%

137. Consider the percentage change in profit for A, B, D and E for the pair of years 2007 and 2008, 2007 and 2008, 2007 and 2011 and 2007 and 2011 respectively. Which shop has the maximum percentage change in profits for the years mentioned ?
   (a) A (b) B
   (c) D (d) E

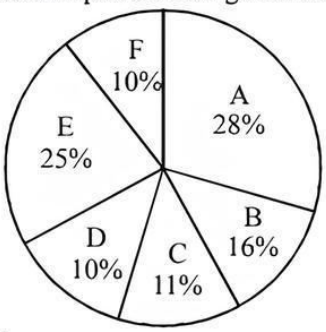
138. What should be the income of D in 2009 so that its profit per cent is 30% ?
   (a) ₹ 14 lakh (b) ₹ 20 lakh
   (c) ₹ 26 lakh (d) ₹ 11 lakh

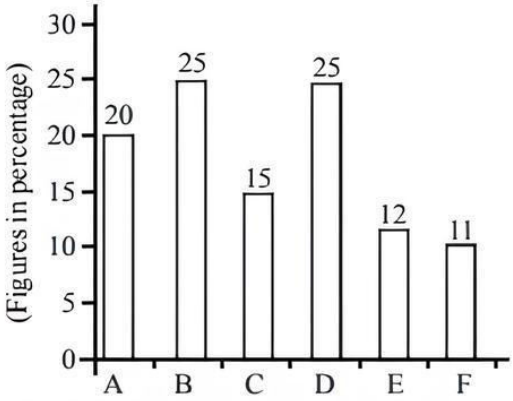
139. To earn a profit of 20% by each of C and E. What is the ratio of investments made by them in 2008 ?
   (a) 7 : 11 (b) 1 : 5
   (c) 5 : 1 (d) 11 : 7

140. Owner of shop C invests ₹ 3 lakh in 2010. What should be the investment of D in the same year to get an income which is double that of C ?
   (a) ₹ 17 lakh (b) ₹ 2 lakh
   (c) ₹ 50000 (d) ₹ 11 lakh

DIRECTIONS (Qs. 141-145): *Study the following graph to answer these questions.*

The following pie-chart shows the percentage number of candidates passed in XYZ examination from States A, B, C, D, E and F of a country in 2005. The bar-graph shows the percentage of fresh candidates who passed their graduation in 2005.





141. If in 2005, the total passed candidates from states A, B, C, D, E and F was 650, then percentage of non-fresher candidates from state A who passed the examination in 2005 is
   (a) 146% (b) 182%
   (c) 36.4% (d) 80%

142. If in 2005, total number of freshers from state D was 160, then how many non-fresher candidates passed the exam from state E ?
   (a) 1408 (b) 1588
   (c) 1398 (d) 1203

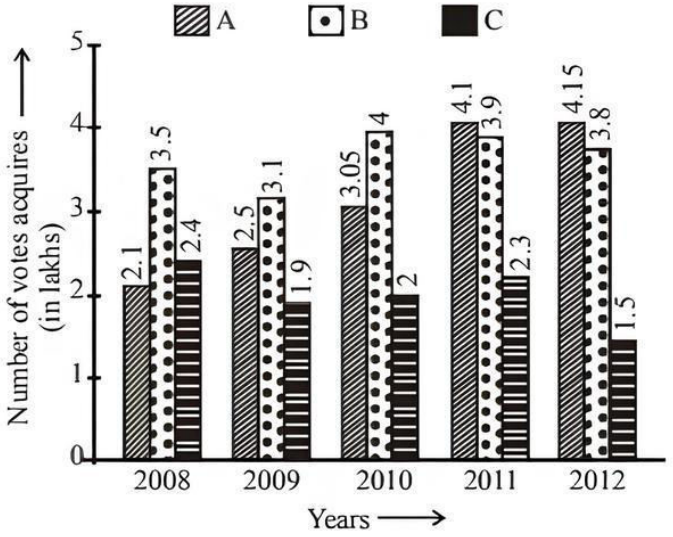
143. If total passed candidates from state B in 2005 was 112, what is the ratio between the number of freshers from state A and that of non-freshers from state C ?
(a) 760 : 187 (b) 187 : 760
(c) 41 : 11 (d) None of these

144. If there is an increase of 10% and 20% candidates from state A and state B in the year 2006 respectively and the number of total passed candidates from state C in 2005 was 77, what would be the approximate total number of passed candidates from state A and state B in 2006 ?
(a) 350 (b) 500
(c) 375 (d) None of these

145. If the non-fresher candidates from state B in 2005 were 60, how many candidates passed the exam from all the states ?
(a) 500 (b) 400
(c) 350 (d) 300

DIRECTIONS (Qs. 146-150): *Study the following graph to answer these questions.*

The bar graph shows the performance of 3 political parties A, B and C in terms of votes acquired in the elections in a constituency during 2008-2012.



146. By what percent is the average number of votes acquired by B more/less than that of A during 2008-2012 ?
(a) 13% more (b) 13% less
(c) 15% less (d) 15% more

147. How many more votes are required by C in 2013 than in 2012 to make the ratio of votes with A, 3 : 2, keeping the votes of A same in 2012 ?
(a) 12.45 lakh (b) 4.725 lakh
(c) 6.225 lakh (d) 1.27 lakh

148. By what per cent should votes of B increase/decrease in 2012 to equal its average during the previous 4 year ?
(a) Increase by 4.6% (b) Increase by 5.8%
(c) Decrease by 5.8% (d) Decrease by 4.6%

149. In 2011, by what per cent should the votes of C increase to exceed the votes of B in the same year by 12%.
(a) 51% (b) 89.9%
(c) 33.9% (d) 53%

150. What per cent of votes were acquired by C with respect to the total votes acquired by all the three parties in 2009 ?
(a) 25.33% (b) 41.33%
(c) 33.33% (d) 61.2%

DIRECTIONS (Qs. 151-155): *In each of these questions two quantities A and B are given. Mark answeras*

(a) if Quantity A is greater than Quantity B.
(b) if Quantity B is greater than Quantity A.
(c) if Quantities A and B are equal.
(d) if comparison cannot be made.

151. Mahesh and Tina each roll a piece of cardboard 25 cm × 30 cm to form a cylinder and attach two sides each together measuring 25 cm and 30 cm respectively.
A : The volume of Mahesh's cylinder.
B : The volume of Tina's cylinder.

152. Seven fair coins are flipped.
A : The probability of getting a head after five consecutive tails.
B : The probability of getting a tail after four consecutive heads.

153. Rajan and Dimple bought the cars of same variety. Ranjan got 10% discount from the dealership and added 7% tax. Dimple added the 7% tax and only then got 10% discount.
A : The amount Rajan paid for the car.
B : The amount Dimple paid for the car.

154. Travis received an allowance. With one fifth of the money he bought a ticket to a movie and with a quarter of what's left he bought a slice of pizza.
A : The price of a movie ticket.
B : The price of a slice of pizza.

155. In a certain closet, there are three green hats, a black shirt, a green shirt and a blue shirt.
A : The number of different sets that can be made where the colour of the hat is identical to the colour of the shirt.
B : The number of different sets that can be made where the colour of the hat is different from the colour of the shirt.

DIRECTIONS (Qs. 156-160): *Study the following graph to answer these questions.*

The distribution of total number of pages for different magazines which are in circulation is given in Chart I. The total number of pages is 1157. The percentage distribution of articles on different topics submitted in any of these magazines is given in Chart II.

Chart I

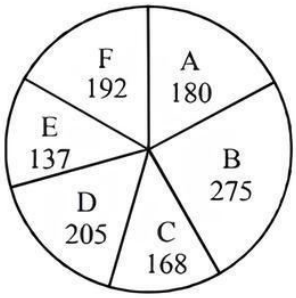
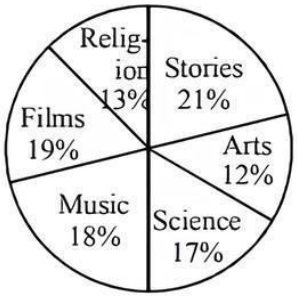


Chart II



156. How many pages more/less are occupied by Stories in 'A' than in 'D'?
(a) 5.25 less (b) 5.25 more
(c) 37.8 less (d) 43.05 more

157. If an magazine F, six articles are in Science, then approximately how many articles are published on Religion?
(a) 7 (b) 5
(c) 3 (d) 6

158. The number of articles on Arts in C is six. The number of articles on Arts in C and B are in the same proportion as the total number of their pages. The number of articles on Arts in B is about
(a) 4 (b) 6
(c) 10 (d) 15

159. In a certain issue of E, eight stories were published and the ratio of total number of articles submitted in E and C is 19 : 20. How many articles were submitted in C?
(a) 35 (b) 38
(c) 54 (d) 40

160. By approximately what per cent of number of pages devoted for Arts is more in B than in A? The percentage given in chart II may be taken as percentage of the pages occupied by the respective topics.
(a) 34.5 (b) 52.7
(c) 25.7 (d) 21.6

SECTION-E : Indian and Global Environment

161. PM Modi chaired the BRICS Summit 2021 virtually. The Summit was which edition of the annual programme?
(a) 12 (b) 13
(c) 15 (d) 11

162. Which subsidiary of ICICI Bank has ceased to function as the subsidiary of the bank recently?
(a) ICICI Direct (b) ICICI Securities
(c) ICICI Lombard (d) ICICI Prudential

163. India's first ever emergency landing strip at National Highway for the Indian Air force Planes has been launched in which state?
(a) Rajasthan (b) Gujarat
(c) Uttar Pradesh (d) Andhra Pradesh

164. Nepal Government has inked an agreement with which country for the reconstruction of cultural heritage projects and health sector projects which got damaged during the 2015 earthquake?
(a) China (b) World Bank
(c) Japan (d) India

165. Indian para-athlete Krishna Nagar won the gold medal in which event at the 2020 Paralympics?
(a) Badminton (b) Archery
(c) Tennis (d) Taekwondo

166. Which company has launched India's first digital payment interactive geospatial platform named Pulse?
(a) Paytm (b) Google
(c) PhonePe (d) Facebook

167. India is the first country in Asia to launch a Plastic Pact to promote circular economy for plastics on 3rd September, 2021. The pact has by CII in collaboration with which organisation?
(a) UNICEF India
(b) UNEP
(c) Fcebook India
(d) World-Wide Fund for Nature-India

168. Which animal has been named as the State animal by the administration of the Union Territory of Ladakh?
(a) Jaguar (b) Red panda
(c) Kashmir stag (d) Snow leopard

169. PM Modi inaugurated a special commemorative coin of what value to mark the birth anniversary of ISKCON founder on 1st September, 2021?
(a) ₹100 (b) ₹125
(c) ₹200 (d) ₹250

170. Which of these countries have been inducted on 2nd September, 2021 as the new member country of the New Development Bank (NDB) set up by BRICS nation?
(a) Bangladesh (b) UAE
(c) Uruguay (d) All of the above

171. How many awardees have been selected for the 2021 Ramon Magsaysay Award on 31st August, 2021?
(a) 4 (b) 5
(c) 3 (d) 6

172. Which Indian Minister has been named as the Sherpa for the G20, 2021?
(a) Piyush Goyal
(b) Venkaiah Naidu
(c) Nitin Gadkari
(d) Kiren Rijiju

173. The Chandigarh Railway Station has been recognised with the 5-star 'East Right Station' certification of FSSAI. How many Railway stations in India are now awarded this certification?
(a) 1 (b) 3
(c) 7 (d) 5

174. Which country hostel the 8th Meeting of Agriculture Experts of Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Countries on 31st August, 2021 ?
(a) Bhutan (b) Nepal
(c) Sri Lanka (d) India

175. Name the Indian dairy company which has achieved the feat of being ranked in Rabobank's 2021 Global Top 120 Diary Companies of the World list.
(a) Orissa State Cooperative Milk Producers Federation
(b) Andhra Pradesh Dairy Development Cooperative Federation
(c) Gujarat Cooperative Milk Marketing Federation
(d) Karnataka Co-operative Milk Federation.

176. Sports Minister Anurag Thakur launched the Fit India Mobile Application on 29th August, 2021 to mark National Sports Day. The launch marked how many years of implementation of the Fit India Movement ?
(a) Two (b) Five
(c) One (d) Three

177. Government has introduced Bharat series (BH-series) feature for free movement of personal vehicles acrosss States/UTs of India upon relocation to a new State/UTG. This facility is available on a voluntary basis to
(a) Defense personnel
(b) Employees of Central Government
(c) Employees of State Government
(d) All of the above

178. East Sikkim has topped the North Eastern Region (NER) District SDG Index 2012-22. The index has been launched by?
(a) NITI Aayog
(b) Ministriy of Development of North Region (M/DoNER)
(c) UNDP
(d) All of the above

179. India has been elected as the member of Council of Administration (CA) and Postal Operations Council (POC) of the Universal Postal Union (UPU). In which place is the headquarter of UPU located ?
(a) Rome, Italy (b) London, United Kingdom
(c) Bern, Switzerland (d) Paris, France

180. RBI has extended the scope of tokenisation to consumer devices like laptops, desktops, wearables, IoT devices, etc. The ultimate responsibility for the card tokenisation services is rendered with
(a) Clearing Corporation of India Ltd.
(b) NPCI
(c) RBI
(d) Authorised card payment networks

181. The Ministry of Textile has partnered with which institute of develop 'INDIA size' an Indian size charts based on body measurements ?
(a) National Institute of Fashion Technology (NIFT), Nvi Mumbai
(b) National Institute of Fashion Technology (NIFT), Ahmedabad
(c) National Institute of Fashion Technology (NIFT), Bhubaneswar.
(d) National Institute of Fashion Technology (NIFT), New Delhi.

182. MANTHAN 2021 is a national hackathon launched by Bureau of Police Research and Development (BPR&D) in colloaboration with which organisation to address security challenges faced by the intelligence agencies ?
(a) ISRO (b) AICTE
(c) NPCI (d) NABARD

183. Who has been appointed as the Chairperson of Stop TB Partnership Board ?
(a) Harsh Vardhan (b) Mansukh Mandaviya
(c) Kiren Rijiju (d) Dharmendra Pradhan

184. The Ministry of Finance has notified the Enhanced Access and Service Excellence, EASE-4.0 for 2021-22. What is the theme of the latest edition of EASE ?
(a) Technology-ended, simplified, and collaborative banking
(b) Smart, Technology-enabled Banking for Aspiring India
(c) CLEAN and SMART banking
(d) Roadmap for Banking of the Future

185. Which country has topped the 2021 Global Manufacturing Risk Index ?
(a) France (b) Australia
(c) United States (d) China

186. New Delhi is the 48th safe city in the world as per the Safe Cities Index 2021, which ranked 60 global cities for the level of urban safety. The index is released by which organisation ?
(a) International Monetary Fund
(b) Economist Intelligence Unit
(c) Transparency International
(d) World Economic Forum

187. Who has been appointed as the joint secretary in the Ministry of Coopration ?
(a) Madnesh Kumar Mishra
(b) Pramod Kumar Meherda
(c) Priya Ranjan
(d) Abhay Kumar Singh

188. What is the name given to the mission undertaken by Indian Government for evacuating its citizens from Taliban occupied Afghanistan ?
(a) Opertion Veer Shakti (b) Operation Shiv Shakti
(c) Operation Kali Shakti (d) Operation Devi Shakti

189. Which country has developed world's first ever fossil-free" steel ?
(a) Australia (b) Russia
(c) United States (d) Sweden

190. Which of these regions in India has got the highest altitude herbal park of the country recently ?
(a) Shimla (b) Chamoli
(c) Dehradum (d) Kinnaur

191. The Hisar Airport is being renamed after which of these rulers ?
(a) Raja Harishchandra (b) Maharaja Agarsen
(c) Ahilyabai Holkar (d) Rani Lakshmibai

192. World Sanskrit Day is observed annually on the occasion of which Indian festival ?
(a) Raksha Bandhan (b) Diwali
(c) Ganesh Chaturthi (d) Independence Day

193. The 'National Monetisation Pipeline' was recently launched by FM Nirmala Sitharaman. Pipeline has been developed by which organisation ?
(a) IIT Kanpur (b) DRDO
(c) ONGC (d) NITI Aayog

194. All Women Tri-Services Mountaineering Team, successfully scaled the Mount Manirang and unfurled the national flag. The Mount Manirang is in which state ?
(a) Himachal Pradesh (b) Ladakh
(c) Sikkim (d) Uttarakhand

195. Maki Kaji, who has passed away recently, was the creator of which innovative ?
(a) Lithium-ion battery (b) Abacus
(c) Sudoku (d) Cassette-tape player

196. How many Gallantry awards have been approved by President Ramnath Kovind for armed forces, police and paramilitary personnel on the occasion of Independence Day on 15th August, 2021 ?
(a) 155 (b) 177
(c) 144 (d) 122

197. Unmukt Chand has recently announced his retirement from which game for India ?
(a) Wrestling (b) Football
(c) Sprinting (d) Cricket

198. Vice-President of India M. Venkaiah Naidu recently unveiled the foundation stone of Innovation and Development Centre of JNCASR. In which city is the centrally-owned JNCASR based ?
(a) Bengaluru (b) Pune
(c) Hyderabad (d) Ahmedabad

199. Four new wetlands from India have been added to the list of Ramsar sites. Which of the given options is not true with respect to the location of these wetlands ?
(a) Thol, Gujarat (b) Sultanpur, Uttar Pradesh
(c) Wadhwana, Gujarat (d) Bhindawas, Haryanaa

200. Which Ministry has launched the SAMVAD 2.0 initiative, aftger the successful completion of phase first ?
(a) Ministry of France
(b) Ministry of Women and Child Development
(c) Ministry of Health and Family Welfare
(d) Ministry of Youth Affairs and Sports

HINTS & EXPLANATIONS

1. (d) refer to line "....The proposed code on wages will subsume four extant acts: the minimum wage act of 1948, the payment of wages act of 1936, the payment of bonus act 1965, and the equal remuneration act of 1976.."
2. (b) refer to line ".....enacting labour reforms is always a herculean task and successive governments have shied away from it..."
3. (c) refer to line "....economic theory suggests that a price floor, such as a minimum wage, which mandates how low a price can be set, always results in excess supply of that good or service..."
4. (b) refer to lines ".....the states cannot set a minimum wage lower than the one set by the central government.....there are indications that it will be significantly higher than the current wage rate. This will invariably result in either retrenchment of employees or a significant slowdown in a new hiring or both.."
5. (b) the author is referring to the top institutions among all institutions mentioned in the list prepared by NIRF.
6. (a) refer to line "....there is a clear skew towards southern, south-eastern and western India..."
7. (a) refer to line "... to the faculty and students in many colleges, what matters is the vision of the administrative leaders and a commitment to excellence.."
8. (d) all of the above is the correct option.
9. (d) refer to line "....market dominance as a slew of carriers including inter globe aviation ltd and spice jet ltd started to offer ultra-cheap, on-time flights more than a decade ago.."
10. (c) refer to line "....the process will likely allow the bidders to look at the accounts of the airline except for some portions that are confidential and also see the share purchase agreement,....."
11. (a) refer to line "...finance minister Nirmala Sitharam said that the government will revive plans to sell air India and the divestment would be part of the government's efforts to raise rs 1,05,000 crore selling stakes ....".
12. (b) refer to line ".....the state run airline has total debts of $8.4 billion and posted losses of more than rupees 7,600 crore last year, according to provisional estimates."
13. (a) refer to line "....RISAT-2B will also use microwave radiation.....easily pass through the cloud cover, haze and dust and image the ground....."
14. (a) refer to line "....RISAT-2B satellite will be transmitting hundreds of microwave pulses each second towards the ground and receiving the signals reflected by the objects using radar..."
15. (b) RISAT-2B is helpful in flood mapping and crop monitoring; refer to 1st paragraph of the passage.
16. (c) **ISRO has made an accomplishment that made nation proud on it** is the correct option.
17. (d) the main issue for women is that they face a lot of violence in their lives especially in developing countries.
18. (d) refer to 5th paragraph of the passage.
19. (c) refer to 2nd paragraph of the passage.
20. (d) refer to 3rd paragraph "....WHO together with UN women and other partners has developed a framework for prevention of violence against women called respect which can be used by governments to counter this menace....."
21. (b) **"transient"** is the correct answer; meaning- lasting or continuing for a short period of time
Permanence- the quality or state of being permanent: durability.
Indulgence- the state of having or doing whatever you want
Circular- round and flat; shaped like a circle
22. (a) **"unconventional, statement"** fit the blanks most appropriately.
Unconventional- not based on or conforming to what is generally done or believed.
Conforming- to obey a rule or law **unconstitutional-** not in accordance with the political constitution or with procedural rules.
23. (b) **"popular, connoisseur"** fit the blank most appropriately;
Connoisseur- a person who knows a lot about art, good food, music, etc.
Philanthropist- a rich person who helps the poor and those in need, especially by giving money
Notorious- well known for something bad
24. (c) **"claustrophobia"** is the correct answer;
Agoraphobia- fear of being in public places where there are a lot of people
Enochlaphobia- refers to a fear of crowds.
Stasiphobia- is the fear of standing or walking.
25. (d) **"extempore"** is the correct answer.
Elocution- the ability to speak clearly, correctly and without a strong accent
Dialect – a form of a language that is spoken in one area of a country
Dialogue- conversation between people in a book, play, etc.
26. (c) **"a miser "** is the correct answer.
27. (b) **"a small part a bigger problem"** is the correct answer.
28. (c) **"to force an issue that has already ended"** is the correct answer.
29. (b) **"DAEBC" is the correct order**; D appropriately initiates the sentence, followed by A and E as they further talk about what had been discussed in D .i.e. Helen and miss Sullivan, C appropriately concludes the passage following B.

30. (d) **"BDCAE" is the correct order;** B appropriately initiates the sentence, by talking about "Nature", followed by D and C talking about "controllers of our body" and "endocrine glands", while A and further talks about "endocrine glands" and their properties E concluding the passage.
31. (a) **"BEADC" is the correct order;** B appropriately initiates the sentence, by talking about "heart ailments", followed by E continuing the chain " these days....this era"...., A talks about "these" which refers to "troubles in E hence coherently continuing the passage further discussed in D and concluded in C.
32. (b) **"bold"** is the opposite in meaning to the given word;
Humble- not thinking that you are better or more important than other people; not proud.
Coy- pretending to be shy or innocent
Sober- not funny; serious
Demure- (used especially about a girl or young woman) shy, quiet and polite.
33. (c) **"virtuous"** is the correct answer; meaning- behaving in a morally good way
Wicked- evil or morally bad in principle or practice; sinful; iniquitous.
Monstrous- that people think is shocking and unacceptable because it is morally wrong or unfair.
Atrocious- extremely bad or unpleasant.
Nefarious- flagrantly wicked or impious: evil.
34. (d) **"altruist"** is the answer; meaning-an unselfish person whose actions show concern for the welfare of others.
Scoundrel- a man who behaves very badly towards other people, especially by being dishonest
Rogue- behaving differently from other similar people or things, often causing damage
Charlatan- a person who says that he/she has knowledge or skills that he/she does not really have
Knave- a dishonest or unscrupulous man.
35. (d) **"spread"** is the correct answer;
Nimble- able to move quickly and lightly.
Frayed- worn or shredded at the ends or edges
Jade- a hard stone that is usually green and is used in making jewellery
Splayed- to cause to spread outward. 2: to make oblique: bevel. Intransitive verb. 1: to extend apart or outward especially in an awkward manner. 2: slope, slant.
36. (c) **"ecstatic"** is the correct answer; meaning-extremely happy.
Airy- having a lot of fresh air inside.
Enlivening- make (something) more entertaining, interesting, or appealing.
Buoyant- (used about a material) floating or able to float or able to keep things floating.
37. (d) **"wound"** is the appropriate alternative;
Sanguine- cheerful, hopeful and confident about the future.
Chipper- cheerful and lively.
Contented- happy or satisfied.
Blister- A blister is a painful skin condition where fluid fills a space between layers of skin.
38. (b) 'refers' always is followed by the preposition 'to', hence to make the sentence grammatically appropriate, 'refers to' should be used before 'subdued'.
39. (b) the correct conjunction would be ' not only....but also', hence place 'also' between 'but' and 'increased'.
40. (d) no error.
41. (b) Only Conclusion II follows as when company staff motivated then they get sense of involvement by participating in the management of companies, so they are allowed to participate.
42. (c) Neither of conclusion follows the above statement.
43. (d) Both conclusions can follow. The statement given as world can be good or bad for different persons depending on their experience and views.
44. (c) The last day of a century cannot be either Tuesday, Thursday or Saturday.

Solution (45-47) :

Characteristics/Books	Blue Cover	Red cover	New volume	Old volume	Law books	Engineering books
O	✗	✓	✓	✗	✓	✗
N	✓	✗	✓	✗	✓	✗
M	✓	✗	✗	✓	✓	✗
L	✗	✓	✓	✗	✗	✓
K	✓	✗	✗	✓	✗	✓
J	✓	✗	✗	✓	✗	✓

45. (c) From the above table book of old volume of engineering having blue cover are K and J
46. (b) Books of new volume of engineering having red cover is L.
47. (d) Books of new volume of law having blue cover is N.
48. (c) Sequence of persons living in the flats is given as;
Mr. M
Mr. A
Mr. G
Mr. L
Mr. R
So, Mr. M lives in the topmost flat.
49. (d) Since, both Statements I and II are effect of same common cause i.e. bitumen is causing cancer to humans.
50. (a) Here, Statement I is the cause and Statement II is its effect i.e. after the survey is conducted, then based on that survey, national campaign network for men's health launched its awareness.
51. (b) Here, Statement II is the cause and Statement I is its effect i.e. since all credit society members have withdrawn major amount of deposits from the credit society. So, the credit society has decided to stop giving loans to farmers with immediate effect.
52. (d) Here, only Conclusion II follows because in the statement nothing is said about the wellness or income

of parents their only concern is about the education of their child.

53. (b) Here, only Conclusion II follows because this statement is a quote given by the Greek philosopher. Socrates which implies that knowledge of word is too vast to be explored by a single person.

54. (a) Only Conclusion I follows because funding education improve quality of education along with other factors but funding alone cannot gurantee the enhancement of quality of education.

55. (d) As, Happy and Sad are opposite to each other in the same manner Energetic and Lazy are opposite to each other.

56. (c) As, River flows to meet the Ocean. Similarly, Lane goes on to meet the Road.

57. (c) As, cap is wore on Head in the same way Socks are wore on feet.

58. (c) Here, 27th March 1995 was Monday. Now, for calculating total number of odd days. First, we calculate total number of days till 1 November 1994.

$\therefore$ Number of days in March 1995 = 27
Number of days in February 1995 = 28
Number of days in January 1995 = 31
Number of days in December 1995 = 31
Number of days in November 1995 = 29
146

$\therefore$ Number of odd days = $\frac{146}{7} = 20\frac{6}{7}$

So, 6 odd days,
$\therefore$ On November 1, 1994 = Monday – 6 = Tuesday

Solution. (59-61): According to the given information

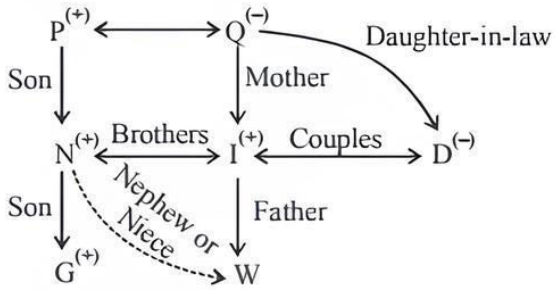
Characteristics/ Employees	Dehradun	Mangalore	Tall	Short	Male	Female
P	✓	✗	✗	✓	✗	✓
O	✓	✗	✗	✓	✓	✗
N	✗	✓	✗	✓	✗	✓
M	✗	✓	✓	✗	✗	✓
L	✗	✓	✗	✓	✓	✗
K	✗	✓	✓	✗	✓	✗

59. (d) From the above table, tall female from Mangalore is M.

60. (c) Short female from Dehradun is P.

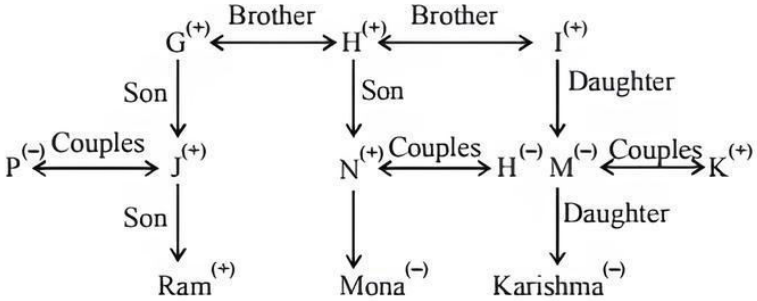
61. (b) Tall male from Mangalore is K.

62. (c)



(+) → Male member
(–) → female member
↔ → Married couples
From the above generation, we see that N is uncle of W or W is nephew or niece of N.

63. (c)



(+) 1 → Male member
(–) 1 → female member
↔ → couples
From the above generation tree, we see that Mona is the granddaughter of H.

Solution (64-66) : According to the given information

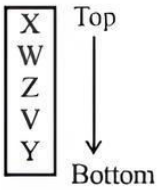
Characteristics/Friends	Stay away	Stay near	IV	V	VI	Subjects			
						Hindi	Maths	Social Science	Science
R	✓	✗	✓	✗	✗	✗	✓	✗	✗
K	✗	✓	✓	✗	✗	✓	✗	✓	✓
A	✓	✗	✗	✓	✗	✓	✓	✓	✓
J	✓	✗	✗	✗	✓	✗	✗	✗	✗
L	✓	✓	✓	✓	✓	✓	✓	✓	✓
K	✓	✓	✓	✓	✓	✓	✓	✓	✗

64. (c) From the above table. A is good in all the subjects.
65. (c) J is weak in all the subjects.
66. (c) R and A are good in Mathematics.

Solution (67-69) : According to the given information

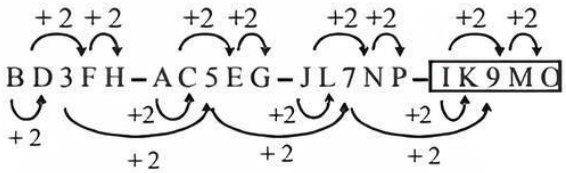
Requirement/ Students	Bihar	Jharkhand	Tall	Short	Jeans	Caps
Q	✓	✗	✗	✓	✓	✗
P	✓	✗	✗	✓	✗	✓
O	✗	✓	✗	✓	✓	✗
N	✗	✓	✓	✗	✓	✗
M	✗	✓	✗	✓	✗	✓
L	✗	✓	✓	✗	✗	✓

67. (b) From the above table, we see that the two students who are not wearing jeans and short are P and M.
68. (d) The student who is short and is from Jharkhand wearing a cap is M.
69. (c) The student who is tall from Jharkhand and wearing a jeans is N.
70. (b) Data is arranged as follows

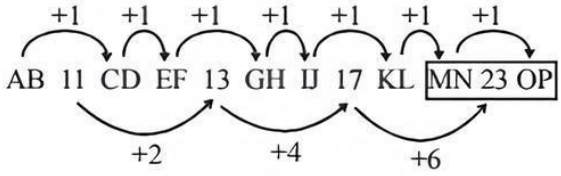


Hence, book at the bottom is Y.

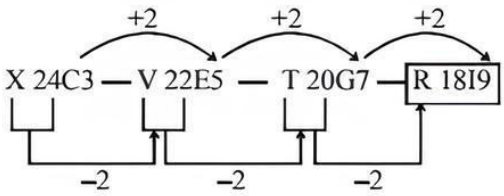
71. (a)



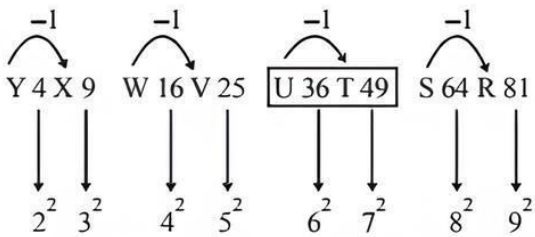
72. (d)



73. (c)



74. (b)



75. (a) Copper is a good conductor of electricity, so it is used to make electrical wires.
76. (a) Democracy is where the people elect their own representatives to form the government.
77. (a) India became independent on 15th August 1947, so it celebrates Independence day on 15th August.
78. (d) A is false as in India 2nd October is observed as Gandhi Jayanti R is true.
79. (b) From the given conditions data is arranged in decreasing order is

$$A > B > C > D > E$$

$\therefore$ E scored lowest in the examination.

80. (d) Six coins can be placed around the coin which touches the central and adjacent coin.
81. (b) Suppose the filling capacity of pump be a m³/min.
So, the emptying capacity of pump will be $(a+10)$ m³/min.
According to question,

$$\frac{2400}{a} - \frac{2400}{a+10} = 8$$

$$\Rightarrow 2400\left[\frac{10}{a(a+10)}\right] = 8$$

$$\Rightarrow a^2 + 10a - 3000 = 0$$

$$\Rightarrow (a+60)(a-50) = 0$$

$\Rightarrow a = 50$ & $a = -60$ (not possible)

Therefore, the filling capacity of pump is 50 m³/min.

82. (d) Suppose the distance between A and B be d km.
According to question,

$$\frac{d}{9+3} + \frac{d}{9-3} = 3$$

$$\Rightarrow \frac{d}{12} + \frac{d}{6} = 3$$

$$\Rightarrow 3d = 36$$

$\therefore d = 12$ km (distance)

83. (b) Height of cistern $= \frac{50}{4.5 \times 3} = \frac{100}{27}$ m

$\therefore$ Area lined with sheet lead

$$= 4.5 \times 3 + 2 \times \frac{100}{27}(4.5+3)$$

$$= 13.5 + 2 \times \frac{100}{27} \times 7.5$$

$$= 13.5 + \frac{1500}{27}$$

$$= \frac{1864.5}{27} \text{ m}^2$$

Hence, weight of lead required

$$= \frac{1864.5}{27} \times 27$$

$$= 1864.5 \text{ kg}$$

84. (a) Probability of bag I chosen $= \frac{2}{6} = \frac{1}{3}$

Probability of bag II chosen $= \frac{4}{6} = \frac{2}{3}$

Probability of black ball is drawn from bag I $= \frac{3}{7}$

Probability of black ball is drawn from bag II $= \frac{4}{7}$

Hence, Probability of black ball chosen

$$= \frac{1}{3} \times \frac{3}{7} + \frac{2}{3} \times \frac{4}{7} = \frac{3}{21} + \frac{8}{21} = \frac{11}{21}$$

85. (b) Suppose the rate per cent of bill be R % per annum,
And, the amount of bill be ₹ A.
According to question,

$$A = \frac{1200}{100}\left(100 + \frac{7}{12}R\right) = 12\left(100 + \frac{7}{12}R\right) \quad ...(i)$$

$$A = \frac{1016}{100}\left(100 + \frac{5}{2}R\right) = 10.16\left(100 + \frac{5}{2}R\right) \quad ...(ii)$$

From Eqs. (i) and (ii),

$$12\left(100 + \frac{7}{12}R\right) = 10.16\left(100 + \frac{5}{2}R\right)$$

$\Rightarrow 1200 + 7R = 1016 + 25.4R$
$\Rightarrow 18.4R = 184$
$\therefore R = 10\%$ rate per annum

86. (d) According to question,
$P + 2Q + R = 59$ ...(i)
$3P + Q + R = 68$ ...(ii)
$P + 3Q + 3R = 108$ ...(iii)
On multiplying equation (ii) by 3 and subtracting from equation (iii),
$8P = 96$
$\Rightarrow P = 12$ years

87. (b) Required hours per day

$$= \frac{2 \times 90 \times 12000 \times 8 \times 12}{3 \times 80 \times 9000 \times 6}$$

$= 16$ hours.

88. (b) Suppose the present age of Shyam be a yrs.

$\therefore$ Age of Shyam's grandson Anup $= \frac{a-6}{18}$ yrs

According to question,
Age of Anup = Age of Mahesh $- 2 = 5 - 2 = 3$ yrs

$$\Rightarrow \frac{a-6}{18} = 13$$

$\therefore a = 60$ yr (Shyam's age)

89. (a) Distance covered by A
$= 2 \times \pi \times 100 = 200\pi$ m
Distance covered by B
$= 2 \times \pi \times 102 = 204\pi$ m
Time taken by A = 1 min 30 s = 90 s
Time taken by B = 1 min 32 s = 92 s.

A's speed $= \frac{200\pi}{90} = 2.22\pi$

B's speed $= \frac{204\pi}{92} = 2.21\pi$

$= 18400 : 18360$
Hence, speed of A is greater than B.

90. (b) Quantity of salt in given solution

$$= 1000 \times \frac{4}{100} = 40 \text{ gm}$$

$\therefore$ Minimum quantity of water required after which sedimentation starts $= \frac{40}{25} \times 100 = 160$ gm

$\therefore$ Water needs to evaporated $= 1000 - 160 = 840$ gm

Required time to evaporated $= \frac{840}{28} = 30$ h

Hence, after 31 h, the given solution starts sedimenting.

91. (a) Suppose the cost price of computer system is ₹ a and cost price of colour printer is ₹ b.
According to question,

$$a + b = \frac{90}{100}a + \frac{120}{100}b$$

$\Rightarrow a - 2b = 0$ ...(i)

and $(a + b) - 800 = \frac{105}{100}a + \frac{85}{100}b$

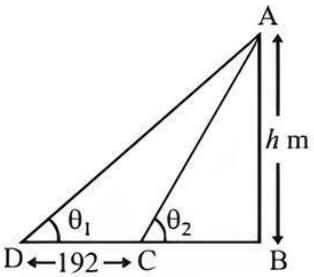
$\Rightarrow -a + 3b = 16000$ ...(ii)

On solving equation (i) and (ii),
$b = 16000$, $a = 32000$
Hence, cost of colour printer = ₹ 16000

92. (a) Total number of integers = 20
Number of ways in which 2 integers can be selected $= {}^{20}C_2 = 190$
$\therefore$ Number of ways in which 1 odd and 1 even integer can be selected $= 10 \times 10 = 100$

Hence, probability that sum is odd $= \frac{100}{190} = \frac{10}{19}$

93. (c)



Suppose the height of tower be h m.
According to question,

$$\tan\theta_1 = \frac{h}{192 + BC} = \frac{5}{12}$$

$$\Rightarrow \frac{12}{5} = \frac{192 + BC}{h} \quad ...(i)$$

and $\tan\theta_2 = \frac{h}{BC} = \frac{3}{4}$ ...(ii)

On subtracting equation (ii) From equation (i), we get

$$\frac{192}{h} = \frac{12}{5} - \frac{4}{3}$$

$$\Rightarrow \frac{192}{h} = \frac{16}{15}$$

Hence, $h = \frac{192 \times 15}{16} = 180\text{ m}$

94. (a) Suppose the total production of hematite be a kg.
Quantity of ore gets wasted = 20% of a
Quantity of pure iron obtained

$$= \frac{25}{100} \times \frac{80}{100} \times a = \frac{1}{5}a \text{ kg}$$

According to question,

$$\frac{1}{5}a = 80000$$

$\Rightarrow a = 400000$ kg (Quantity of hematite)

95. (c) Suppose the sum be P, rate R% per annum and time T yr.
According to question,

$$\left[P\left(1+\frac{R}{100}\right)^2 - P\right] - \frac{P \times R \times 2}{100} = 20$$

$$\Rightarrow \frac{PR^2}{(100)^2} = 20 \quad ...(i)$$

and $\left[P\left(1+\frac{R}{100}\right)^3 - P\right] - \frac{P \times R \times 1}{100} = 61$

$$\Rightarrow \frac{PR^3}{100^3} + \frac{3PR^2}{(100)^2} = 61 \quad ...(ii)$$

From Eqn. (i) and (ii),

$$\Rightarrow \frac{R}{100} \times 20 + 3 \times 20 = 61$$

$$\Rightarrow \frac{R}{5} = 1 = R = 5\%$$

Now, $\frac{PR^2}{(100)^2} = 20 \Rightarrow \frac{P \times (5)^2}{(100)^2} = 20$

$$\Rightarrow \frac{P \times 25}{100 \times 100} = 20$$

$\Rightarrow P = 400 \times 20 = ₹8000$ (sum)

96. (d) Suppose the number of units produced per week is a.
Selling price of all units = $60a$
$\therefore$ Cost price of all units = $40a + 3000$
According to question,
$40a + 3000 + 1000 = 60a$
$\Rightarrow 20a = 4000$
$\Rightarrow a = 200$ units per week

97. (b) Let the distance covered is d km
and speed of train is s km/h.
$\therefore$ According to question,

$$\frac{d}{s} - \frac{d}{s+4} = \frac{30}{60}$$

$$\Rightarrow 8d = s^2 + 4s \quad ...(i)$$

and $\frac{d}{s-2} - \frac{d}{s} = \frac{20}{60}$

$$\Rightarrow 6d = s^2 - 2s \quad ...(ii)$$

From equation (i) and (ii),

$$\frac{s^2+4s}{8} = \frac{s^2-2s}{6}$$

$$\Rightarrow 6s^2 + 24s = 8s^2 - 16s$$

$$\Rightarrow 2s^2 - 40s = 0$$

$\therefore s = 20$ km/h
Hence, distance covered by man

$$= \frac{(20^2 - 2 \times 20)}{6} = 60 \text{ km}$$

98. (a) Let quantity of mixture be 100 ml.
$\because$ Quantity of water = 40 ml
$\therefore$ Quantity of milk = 60 ml
Let quantity of mixture replaced by a ml.
$\therefore$ Quantity of water in new mixture obtained
= 26% = 26 ml
According to question,

$$40 - \frac{40a}{100} + \frac{19a}{100} = 26$$

$$\Rightarrow 14 = \frac{21a}{100}$$

$$\Rightarrow a = \frac{14}{21} \times 100 = \frac{2}{3} \times 100$$

Hence, quantity of milk replaced

$$= \frac{\frac{2}{3} \times 100}{100} = \frac{2}{3}$$

99. (a) Suppose the number of boys in the class are x.
According to question,
$18(x+20) = 20 \times x + 20 \times 15$
$\Rightarrow 2x = 60$
$\therefore x = 30$ (Boys)

100. (a) Suppose the speed of faster train be a m/s and speed of slower train be b m/s.
According to question,

$$\frac{240}{a-b} = 60\text{s}$$

$\Rightarrow a-b=4$ ...(i)

and $\frac{240}{a+b}=3s$

$\Rightarrow a+b=80$ ...(ii)

On solving equations (i) and (ii),

$a=42$ m/s and $b=38$ m/s

Hence, speed of faster train = 42 m/s

101. (c) Let pipes A, B and C take $2a$, $3a$ and $4a$ hours to fill or empty the tank respectively.

Now, pipe A and B can fill the tank in 3 h,

$\therefore \frac{1}{2a}+\frac{1}{3a}=\frac{1}{3}$

$\Rightarrow \frac{3+2}{6a}=\frac{1}{3}\Rightarrow a=\frac{5}{2}$

Pipe A $=2\times\frac{5}{2}=5$ h

Pipe B $=3\times\frac{5}{2}=7.5$ h

Pipe C $=4\times\frac{5}{2}=10$ h

According to question,

$\left(\frac{1}{5}+\frac{1}{7.5}-\frac{1}{10}\right)+\left(\frac{1}{7.5}+\frac{1}{10}-\frac{1}{5}\right)+\left(\frac{1}{10}+\frac{1}{5}-\frac{1}{7.5}\right)$

$=\frac{7}{30}+\frac{1}{30}+\frac{5}{30}=\frac{13}{30}=\frac{2}{5}$

Hence, after 3 h tank is $\frac{2}{5}$ filled.

102. (a) Tank filled by pipe A in 1 h $=\frac{1}{30}$

Tank filled by pipe B in 1 h $=\frac{1}{45}$

$\therefore$ Tank filled in 2 h

$=\frac{1}{30}+\frac{1}{45}=\frac{3+2}{90}=\frac{1}{18}$

Let the tank takes a h to get filled.

$\therefore \frac{1}{18}\times a=1$

$a=18$ h

Hence, tank is filled A $=2\times18=36$ h

103. (a) Speed $=\frac{3}{4}$ th

$\therefore$ Time $=\frac{4}{3}$

$\therefore$ Vidya takes $\frac{1}{3}$ extra time during her first half journey.

Now, she takes time to cover her remaining half distance $=1-\frac{1}{3}=\frac{2}{3}$ rd

Hence, speed will be to cover remaining half $=\frac{3}{2}$ times of her usual speed.

104. (b) Time taken by A $=\frac{120}{5}=24$s

Time taken by B $=\frac{120}{8}=15$s

Time taken by C $=\frac{120}{10}=12$s

Hence, the time after which all meet at a starting point = LCM of 24, 15 and 12

= 120 s = 2 min

105. (b) Let the time taken by Sanjit to walk to school = a min

And the time taken by Sanjit to ride bicycle to school = b min

When Sanjit walks one way and rides the other ways

$a+b=90$ ...(i)

When Sanjit rides both way

$b+b=30$ ...(ii)

$\Rightarrow 2b=30$

$\Rightarrow b=15$ min

$a+15=90$

$\Rightarrow a=75$ [from eqn. (i)]

Hence, time taken by Sanjit to walk both ways

$=75+75=150$ min $=2.5$ h

106. (c) Work done by A and B in 1 day $=\frac{1}{30}$

$\therefore$ 11 day's work $=\frac{11}{30}$

Remaining work $=1-\frac{11}{30}=\frac{19}{30}$

Hence, A alone can finish the work in $=28\times\frac{30}{19}$

$=44\frac{4}{19}$ days

107. (b) Suppose the total number of apples be 100,

$\therefore$ Per cent of apple remained = (100 – 60) = 40%

Now, 40% of 100 $=\frac{40\times100}{100}=40$

15% of the remaining apples

$=15\%$ of $40=\frac{15\times40}{100}=6$

Apples left with vendor = 40 – 6 = 34

He sold 50% of apples and throw the remaining.

$\therefore$ 50% of $34 = \frac{50 \times 34}{100} = 17$

$\therefore$ Total apples throw $= (17 + 6) = 23$

Hence, required percentage $= \frac{23 \times 100}{100} = 23\%$

108. (c) Efficiency $\propto \frac{1}{\text{Time taken}}$

Let, efficiency of A and C $= 5x$ and $3x$

According to question,

$$\frac{1}{3x} - \frac{1}{5x} = 6$$

$$\frac{5-3}{15x} \Rightarrow \frac{1}{x} = 45$$

$\therefore$ Time taken by,

$$A = \frac{1}{5x} = \frac{45}{5} = 9 \text{ days}$$

and time taken by,

$$C = \frac{1}{3x} = \frac{45}{3} = 15 \text{ days}$$

Ratio of number of days taken by B and C = 2 : 3

$\therefore$ Time taken by $B = \frac{2}{3} \times 15 = 10$ days

Now, B and C's one day work

$$= \frac{1}{10} + \frac{1}{15} = \frac{3+2}{30} = \frac{1}{6}$$

$\therefore$ Two days work of B and $C = 2 \times \frac{1}{6} = \frac{1}{3}$

Remaining work $= 1 - \frac{1}{3} = \frac{2}{3}$

Hence, number of days taken by A to finish the remaining works.

$$= \frac{2}{3} \times 9 = 6 \text{ days.}$$

109. (b) Number of questions for team A

$$= \frac{90 \times 300}{100} = 270$$

Let the question attempted per hour by $A = a$

$\therefore$ Questions attempted per hour by $B = a + 7$

According to question,

$$\frac{270}{a} + 3 = \frac{100}{a+7} + 6$$

$$\Rightarrow \frac{270}{a} = \frac{300 + 3(a+7)}{a+7}$$

$\Rightarrow 270(a+7) = (300 + 3a + 21)a$

$\Rightarrow 3a^2 + 51a - 1890 = 0$

$a^2 + 17a - 630 = 0$

$\Rightarrow (a - 18)(a + 35) = 0$

$\Rightarrow a = 18, -35$

Hence, team A attempted 18 questions / hr.

110. (c) Quantity of sand $= \frac{45 \times 900}{100} = 405$ kg

Quantity of cement $= 900 - (405 + 144)$

$= 900 - 549 = 351$ kg

Hence, required percentage

$$= \frac{351}{900} \times 100\% = 39\%$$

111. (b) Suppose the money invested by Harris in venture B = ₹ a

And money invested in A = ₹ $(40000 - a)$

According to question,

$$\frac{a \times 12 \times 1}{100} + \frac{(40000 - a) \times 8 \times 1}{100} = ₹4000$$

$$\frac{12a}{100} + \frac{320000 - 8a}{100} = 4000$$

$$4a + 320000 = 400000$$

$$a = \frac{80000}{4} = 20000$$

Hence, Harris invested ₹ 20000 in venture B.

112. (d) Suppose the probability that C wins $= a$

$\therefore$ Probability that B wins $= 2a$

and probability that A wins $= 4a$

So, sum of all probability for an event is equal to 1

$\therefore a + 2a + 4a = 1$

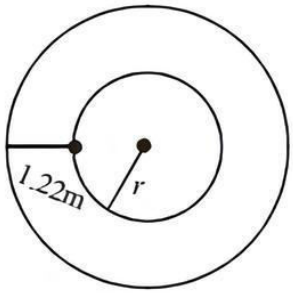
$$7a = 1 \Rightarrow a = \frac{1}{7}$$

$\therefore$ Probability that A wins $= \frac{4}{7}$

Hence, the probability that A loses $= 1 - \frac{4}{7} = \frac{3}{7}$

113. (c) Also, probability that point is closer to centre than boundary of circle $= \frac{\pi r^2 / 4}{\pi r^2} = \frac{1}{4}$

114. (b) Let radius of inner circle $= r$ m



$\therefore$ Radius of outer circle $= (r + 1.22)$ m

Distance covered by outer wheel is $1\frac{1}{2}$ times the inner wheel.

According to question,

$$\therefore \quad \frac{3}{2}\times 2\pi r = 2\pi(r+1.22)$$

$$3r = 2r + 2.44 \Rightarrow r = 2.44$$

Hence, distance covered by outer wheel

$$= 2\pi(1.22+2.44)$$

$$= 2\times\frac{22}{7}\times 3.66 = 23\,\text{m}$$

115. (c) Let rate of interest = Number of year = R
And, principal = P

$$\text{So, SI} = \frac{P}{9}$$

$$\therefore \text{SI} = \frac{P\times R\times T}{100}$$

$$\Rightarrow \frac{P}{9} = \frac{P\times R\times R}{100}$$

$$\Rightarrow \frac{100}{9} = R^2$$

$$\Rightarrow R^2 = \sqrt{\frac{100}{9}} = \frac{10}{3} = 3.33\%$$

116. (d) Using option (d),
Bid price of B = ₹ 100000
And, initially ratio of bid = 7 : 4
So, bid price of A = ₹ 175000
Amount of bid left for A
= ₹ 175000 – ₹ 100000
= ₹ 75000
Hence, final ratio of bid after withdrawal
= 75000 : 100000 = 3 : 4

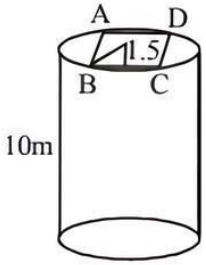
117. (c) Student studies from 11 am to 8 pm on Monday to Friday = 9 hrs.

$$\text{And he studies on Saturday} = \frac{1}{3}\times 9 = 3\text{ hrs.}$$

$\therefore$ He studied during the week = 5 × 9 + 3
= 48 hrs
Total hours in a week = 24 × 7 = 168

$$\text{Hence, required fraction} = \frac{48}{168} = \frac{2}{7}$$

118. (c)



$$\therefore \quad BD^2 = BC^2 + DC^2$$

$$(3)^2 = BC^2 + BC^2$$

($\because$ Its a square base, BC = DC)

$$9 = 2\,BC^2$$

$$BC = \sqrt{\frac{9}{2}} = \frac{3}{\sqrt{2}}\text{m}$$

Hence, volume of parallelopiped

$$= \frac{3}{\sqrt{2}}\times\frac{3}{\sqrt{2}}\times 10 = \frac{9\times 10}{2} = 45\,\text{m}^3$$

119. (b) 85% of 73 L of wine $= \frac{85\times 73}{100}$

Now, suppose the process is repeated n times.

$$\text{So, } \frac{85\times 73}{100} > \left[73\left(1-\frac{365}{73}\right)^n\right]$$

$$\Rightarrow \frac{85\times 73}{100} > 73\times\left(1-\frac{365}{73}\right)^n$$

$$\Rightarrow \frac{85}{100} > \left(\frac{73-365}{73}\right)^n$$

$\Rightarrow 0.85 > (0.95)^n$
On solving $n > 3$
Hence, minimum 4 operations are required.

120. (c) Case I
Selecting four out of first five and six out of remaining eight questions
${}^5C_4 \times {}^8C_6 = 140$ choices
Case II
Selecting 5 out of five and 5 out of remaining eight questions
${}^5C_5 \times {}^8C_5 = 56$ choices
Total no. of choices = 140 + 56 = 196.

121. (b) Number of commuters commuting by A
= 17171 + 26983 + 9812 = 53966

$$\text{Hence, required percentage} = \frac{53966}{122650}\times 100 = 44\%$$

122. (c) A = 17171, B = 7359, C = 22077, D = 14718, E = 4906, F = 7359
A + C = 26983, A + E = 9812
Percentage commuters by

$$E = \frac{4906}{122650}\times 100 = 4\%$$

Percentage commuters by B and F together

$$= \frac{7359+7359}{122650}\times 100 = 12\%$$

Hence, required difference = 12 – 4 = 8%

123. (b) Total number of votes in favour of A and C in January, May and September
= |(3 + 1.5) + (1 + 2.5) + (2 + 3.5)|
= |4.5 + 3.5 + 5.5| = 13.5 lakh
Total number of votes in favour B and D in March. July and November
= [(4 + 3) + (1 + 4.5) + (2 + 4)]
= 7 + 5.5 + 6 = 18.5 lakh
Hence, required less percentage

$$= \frac{18.5-13.5}{13.5} \times 100$$

$$= \frac{5}{13.5} \times 100 = 37.03\%$$

124. (b) Percentage decline in votes of B from January to May

$$= \frac{1.5}{2.5} \times 100 = 60\%$$

Percentage decline in votes of C from January to March

$$= \frac{1}{3} \times 100 = \frac{100}{3}\%$$

Hence, required ratio $= 60 : \frac{100}{3} = 60 : 33.33$

$= 20 : 11$

125. (c) Votes acquired by D in all 6 months
$= 4+4+3.5+4.5+4.5+4 = 24.5$ lakh
And, votes acquired by A in all 6 months
$= 1.5+1+1+1.5+2+2 = 9$ lakh
Hence, required percentage

$$= \frac{24.5-9}{9} \times 100\%$$

$= 172.2\% \cong 172\%$

126. (d) According to question,

$$\frac{9}{5+x} = \frac{5}{9}$$

$\Rightarrow 81 = 25 + 5x$
$\Rightarrow 5x = 56$
$\Rightarrow x = 11.2$
Hence, required percentage

$$= \frac{11.2}{5} \times 100 = 224\%$$

127. (b) Votes of D in September $= 4.5$ lakh
Total number of votes of A and B together in September
$= (2+2) = 4$ lakh
Now, 107% of 4.5 lakh votes

$$= \frac{107 \times 4.5}{100} = 4.815 \text{ lakh}$$

Hence, number of votes required $= (4.815 - 4)$ lakh
$= (0.815)$ lakh $= 81500$

128. (a) Let Suresh's salary $= ₹\,12000$

$$\therefore \text{ Sandra's salary} = 12000 \times \frac{100}{75} = ₹\,16000$$

$$\text{And, Dutt's salary} = \frac{80}{100} \times 12000 = ₹\,9600$$

Hence, quantity A is greater than quantity B

129. (a) Total surface area of a cube $= 150$
$\Rightarrow 6a^2 = 150$
$\Rightarrow a^2 = 25$
$\Rightarrow a = 5$
$\therefore$ Length of one edge of the cube $= 5$
Hence, Quantity A is greater than Quantity B.

130. (a) (A) Profit $= ₹\,275$
Profit percentage on cost price

$$= \frac{275}{1225} \times 100 = 22.44\%$$

So, sale price $= 1225 + 275 = ₹\,1500$
Profit percentage on sale price

$$= \frac{275}{1500} \times 100 = 18.33\%$$

Hence, quantity A is greater than Quantity B.

131. (c) Required revolutions $= \frac{3 \times 20}{2\pi \times 2}$

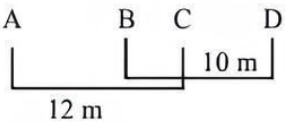
Hence, both statements are required to answer the question.

132. (d) From (i),

$$\frac{x+y+z}{3} = y \Rightarrow x+z = 2y$$

From (ii),
$x + z = 2y$
Hence, both statements together are not sufficient to answer the question.

133. (d)



Hence, both statements together are not sufficient to answer the question.

134. (c) From (i) and (ii) together,

$$\text{Probability of first sock is white} = 1 - \frac{1}{3} = \frac{2}{3}$$

$$\text{Total number of socks} = \frac{24}{2} \times 3 = 36$$

So, we can calculate the probability that both socks are white.
Both statements are required to answer the question.

135. (b) From (ii), Bucket fill in 2 hrs $= \frac{3}{4} - \frac{1}{2} = \frac{1}{4}$

So, remaining $\frac{1}{4}$ part fill at $= 8 + 2 = 10$ P.M.

Hence, statement II alone is sufficient to answer the question but statement I alone is not sufficient.

136. (b) Required percentage

$$= \left(\frac{10-6}{6} \times 100\right)\% = 66.66\%$$

137. (b) Percentage change in profit for A for pair of years 2007 and 2008

$$= \left(\frac{6-4}{4} \times 100\right)\% = 50\%$$

Percentage change in profit for B for pair of years 2007 and 2008

$$=\left(\frac{5-3}{3}\times 100\right)\% = 66.66\%$$

Percentage change in profit for D for pair of years 2007 and 2011.

$$=\left(\frac{7-5}{5}\times 100\right)\% = 40\%$$

Percentage change in profit for E for pair of years 2007 and 2011

$$=\left(\frac{4-6}{6}\times 100\right)\%$$

$$=\left(\frac{-2}{6}\times 100\right)\% = -33.3\% \text{ (Loss)}$$

Hence, it is clear that B has maximum profit.

138. (b) Let the income of D in 2009 be ₹ a
So, 30% of a = 6 lakh

$$\frac{3\times a}{100} = 6$$

$$\Rightarrow a = \left(\frac{6\times 100}{30}\right) = ₹ 20 \text{ lakh}$$

Hence, income of D in 2009 = ₹ 20 lakh

139. (d) Income for C $= \left(\frac{11\times 100}{20}\right) = ₹ 55$ lakh

Income for E $= \left(\frac{7\times 100}{20}\right) = ₹ 35$ lakh

Hence, required ratio $= \frac{55}{35} = \frac{11}{7}$

$\Rightarrow 11 : 7$

140. (a) Income of C = Profit + Investment
= 7 + 3 = ₹ 10 lakh
$\therefore$ Income for D = 10 × 2 = 20 lakh
Hence, investment of D in 2010
= Income – Profit = (20 – 3) = ₹ 17 lakh

141. (d) Percentage of non-fresher candidates passed in 2005 from state A
= (100 – Fresher passed) %
= (100 – 20)% = 80%

142. (a) Total number of candidates passed in exams for state D $= \frac{160\times 100}{25} = 640$

Total candidates passed in exam from all states

$$= \frac{640}{10}\times 100 = 6400$$

So, number of candidates passed from state E

$$= \frac{25\times 6400}{100} = 1600$$

Hence, total required number of non-fresher passed from state E

$$= \left(\frac{88\times 1600}{100}\right) = 1408$$

143. (d) Total number of candidates in all states

$$= \frac{112\times 100}{16} = 700$$

Candidates passed from state C

$$= \frac{11\times 700}{100} = 77$$

Candidates passed from state A

$$= \frac{28}{100}\times 700 = 196$$

Now, fresher candidates from state A passing exam

$$= \frac{20\times 196}{100} = 39.2$$

Non-fresher candidates of state C passing exam

$$= \frac{85\times 77}{100} = 74.8$$

Hence, required ratio

$$= \frac{39.2}{74.8} = \frac{392}{748} = \frac{98}{187} \Rightarrow 98 : 187$$

144. (a) Total number of candidates from state C in 2005

$$= \frac{77\times 100}{11} = 700$$

Number of candidates from state A in 2005

$$= \frac{28\times 700}{11} = 196$$

So, candidates passed in 2006 from A

$$= \frac{110\times 196}{100} = 216$$

Number of candidates passed from state B in 2005

$$= \frac{16\times 700}{100} = 112$$

So, candidates passed in 2006 from B

$$= \frac{120\times 112}{100} = 134$$

Hence, the total passed candidates from state A and state B in 2006 = 216 + 134 = 350

145. (a) Total candidates passed from state B in 2005

$$= \frac{60\times 100}{75} = 80$$

Hence, total candidates passed from all states

$$= \frac{80\times 100}{16} = 500$$

146. (d) Average of votes acquired by A

$$= \frac{2.1+2.5+3.05+4.1+4.15}{5} = 3.18$$

Average of votes acquired by B

$$= \frac{3.5+3.1+4+3.9+3.8}{5} = 3.66$$

Hence, required percentage

$$= \frac{3.66-3.18}{3.18} \times 100\% = 15\%$$

147. (b) Let the required number of votes be a.
According to question,

$$\frac{a+1.5}{4.15} = \frac{3}{2}$$

$$\Rightarrow a+1.5 = \frac{4.15 \times 3}{2}$$

$$\Rightarrow a = 6.225 - 1.5 = 4.725 \text{ lakh}$$

148. (d) Average of votes of B for previous four years

$$= \frac{3.5+3.1+4+3.9}{4}$$

$$= \frac{14.5}{4} = 3.625$$

$\therefore$ Number of votes that should be decreased
$= 3.8 - 3.625 = 0.175$ lakh
Hence, required decrease in percentage

$$= \frac{0.175}{3.8} \times 100\% = 4.6\%$$

149. (b) 112% of votes of B = 112 % of 3.9

$$= \frac{112 \times 3.9}{100} = 4.368 \text{ (Increased votes)}$$

$\therefore$ Increased votes $= 4.368 - 2.3 = 2.068$
Hence, required percentage

$$= \frac{2.068}{2.3} \times 100\% = 89.9\%$$

150. (a) Total votes acquired by all three parties in 2009
$= 3.1 + 2.5 + 1.9 = 7.5$
Hence, required percentage

$$= \frac{1.9}{7.5} \times 100 = 25.33\%$$

151. (b) (A) for Mahesh,
Height of cylinder = 30 cm

and radius of cylinder = $\frac{25}{2\pi}$ cm

$$\therefore \text{Volume} = \pi \times \frac{25}{2\pi} \times \frac{25}{2\pi} \times 30$$

$$= \frac{18750}{12.56} = 1492.8 \text{ cm}^3$$

(B) For Tina,
Height of cylinder = 25 cm

and radius of cylinder = $\frac{30}{2\pi}$ cm

$$\text{Volume} = \pi \times \frac{30}{2\pi} \times \frac{30}{2\pi} \times 25 = 1791.40 \text{ cm}^3$$

Hence, quantity B is greater than A.

152. (c) Probability of getting head $= \frac{1}{2}$

Probability of getting tail $= \frac{1}{2}$

(A) Probability of getting head after 5 consecutive tails $= \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{128}$

(B) Probability of getting tail after four consecutive heads $= \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = \frac{1}{128}$

Hence, quantities A and B are equal.

153. (c) Suppose the price of car be ₹ 100.
(A) Amount Rajan paid after discount

$$= \frac{(100-10) \times 100}{100} = ₹ 90$$

Now, 7% tax on amount = 7% of 90

$$= \frac{7 \times 90}{100} = ₹ 6.3$$

$\therefore$ Ranjan paid car amount $= (90 + 6.3) = ₹ 96.3$
(B) Amount Dimple paid after 7% tax

$$= \frac{107 \times 100}{100} = ₹ 107$$

Then, 10% discount is allowed on amount to paid car amount by Dimple.

$$= \frac{90 \times 107}{100} = ₹ 96.3$$

Hence, quantity A and B are equal.

154. (c) Suppose Travis got a allowance of ₹ 100
(A) He bought a movie ticket for

$$= \frac{1}{5} \times 100 = ₹ 20$$

(B) He bought a slice of pizza for

$$= \frac{1}{4}(100-20) = \frac{1}{4} \times 80 = ₹ 20$$

Hence, quatities A and B are equal

155. (b) (A) Number of sets having same colour of Hat and Shirt = 3
(3 green hats + 1 green shrit)
(B) Number of sets having different colour of hat to that of shirt
(3 green hats + 1 blue shirt) = 3 gets
(3 green hats + 1 black shirt) = 3
∴ Total sets = 3 + 3 = 6
Hence, quantity B is greater than A.

156. (a) Pages occupied by stories in A

$$= \frac{21 \times 180}{100} = 37.8$$

Pages occupied by stories in D

$$= \frac{21 \times 205}{100} = 43.05$$

Hence, difference in pages occupied
= 43.05 – 37.8
= 5.25 pages more in A than D.

157. (b) Pages occupied by Science in F

$$= \frac{17 \times 192}{100} = 32.64$$

$$\therefore \text{Pages per article} = \frac{32.64}{6} = 5.44$$

Pages occupied by religion in F

$$= \frac{13 \times 192}{100} = 24.96$$

Hence, required number of article of religion

$$= \frac{24.96}{5.44} = 5$$

158. (c) Pages occupied by Art in C

$$= \frac{12 \times 168}{100} = 20.16$$

Pages occupied by Art in B

$$= \frac{12 \times 275}{100} = 33$$

Ratio of article = Ratio of pages occupied

$$\therefore \frac{6}{a} = \frac{20.16}{33}$$

$$\Rightarrow a = \frac{6 \times 33}{20.16} = 10$$

Hence, number of article or Art in C = 10

159. (d) Number of pages occupied by stories in E

$$= \frac{21 \times 137}{100} = 28.77$$

$$\text{Page/article of stories in E} = \frac{28.77}{8} = 3.596$$

$$\therefore \text{Number of Articles in E} = \frac{\text{Total Pages}}{\text{Pages/articles}}$$

$$= \frac{137}{3.596} = 38$$

Hence, required number of articles submitted in C

$$= \frac{20 \times 38}{19} = 40$$

160. (b) Pages devoted to Arts in B $= \frac{12 \times 275}{100} = 33$

Pages devoted to Arts in A $= \frac{12 \times 180}{100} = 21.6$

Hence, required percentage $= \frac{33 - 21.6}{21.6} \times 100$

$= 52.7\%$

161. (b) The 13th BRICS summit 2021 was held virtually under the chairmanship of India. Prime Minister of India chaired the 13th BRICS summit 2021 virtual meeting. It will be the third time that India will be hosting the BRICS Summit after 2012 and 2016. **The theme of the 13th BRICS Summit:** 'BRICS@15: Intra-BRICS cooperation for continuity, consolidation, and consensus.' **The 'New Delhi Declaration,** was adopted by the BRICS Leaders which is an outcome document of the 13th BRICS summit.

162. (c) ICICI Lombard General Insurance has ceased to be subsidiary of ICICI Bank, as shareholding of the bank has come down to 48 per cent after the merger of Bharti AXA with the insurer. For a company to be a subsidiary of a another company the parent company must have more than 50% share of the subsidiary.

163. (a) Defence minister Rajnath Singh and Road and Transport Minister Nitin Gadkari in 2021 inaugurated the country's first emergency landing strip on a national highway at **Gandhav-Bhakasar section on NH-925 in Barmer, Rajasthan**. In that section, NHAI developed a 3-km section of the highway as an emergency landing facility (ELF) for the IAF.

164. (d) In September 2021, India has signed a construction project with Nepal to reconstruct 14 cultural heritage projects and 103 health projects across the various districts in Nepal. The construction project was signed between the Indian Embassy in Nepal and Nepal's Central Level Project Implementation Unit (Building) of the National Reconstruction Authority (NRA). The project was signed to reconstruct the national heritage sites of Nepal, which were damaged during the 2015 earthquakes.

165. (a) Krishna Nagar is an Indian para-badminton player from Rajasthan. He had been ranked world number 2 in para-badminton men's Singles SH6. He has won a gold medal at **2020 Summer Paralympic.** It was India's 19th medal – and the fifth gold – at the Tokyo Games.

166. (c) In September 2021 PhonePe, India's leading fintech platform, announced the launch of ***PhonePe Pulse***, India›s first interactive geospatial website with data, insights and trends on digital payments in the country. The ***PhonePe Pulse website*** showcases more than 2000+ Crore transactions by consumers on an interactive map of India. With over 45% market share, PhonePe's data is representative of the country's digital payment habits.

167. (d) India is the First Asian Country to Launch a Plastics Pact. The India Plastics Pact, is a joint initiative between the Confederation of Indian Industry and WWF India. The Pact targets to enable businesses to transition towards a circular economy for plastics by 2030.

168. (d) The **snow leopard (Panther unica) and black-necked crane (Grus nicricollis)** were notified as the State animal and State bird respectively of the UT of Ladakh after an order issued by the Lieutenant Administration (LG) of Ladakh in September 2021.

169. (b) In September 2021, Prime Minister Narendra Modi released a special commemorative coin of **Rs 125** to mark the 125th birth anniversary of ISKCON founder Srila Bhaktivedanta Swami Prabhupada via video conferencing.

170. (d) **Bangladesh, UAE, and Uruguay** joined BRICS New Development Bank in September 2021. BRICS New Development Bank is a multilateral bank that was established by **Brazil, Russia, China, India, and South Africa** in 2015 to finance sustainable development and infrastructure projects.

171. (b) Ramon Magsaysay Awards 2021 were conferred to five people. Among the awardees is **Dr Firdousi Qadri** of Bangladesh and **Muhammad Amjad Saqib** of Pakistan, as well as Philippine fisheries and community environmentalist **Roberto Ballon,** American citizen **Steven Munsi,** who works for humanitarian work and help refugees, and Indonesian **WatchDoc** for investigative journalism. The Ramon Magsaysay Award is an annual award, which is also known as Asia's Nobel Prize. It celebrates the memory and leadership example of the third Philippine president after whom the award is named.

172. (a) Shri Piyush Goyal, Union Minister for Commerce & Industry, Consumer Affairs, Food & Public Distribution, and Textiles, was appointed as India's Sherpa for the G20 summit in 2021 in Italy. For 2022 meet in Bali, former NITI Aayog CEO Amitabh Kant has been appointed as Sherpa. India has been a member of the G20 since its inception in 1999. India will be holding the G20 Presidency from 1 December 2022 and will convene the G20 Leaders' Summit in 2023 for the first time.

173. (d) The Chandigarh Railway Station(CRS) was awarded a 5 star 'Eat Right Station' certification for providing high-quality, nutritious food to passengers. **The certification was awarded by the Food Safety and Standards Authority of India (FSSAI).** The Chandigarh Railway Station becomes the fifth station in India to get this recognition.

174. (d) India hosted the 8th Meeting of Agriculture Experts of **BIMSTEC** countries. **BIMSTEC** is an economic bloc established in 1997 through the Bangkok Declaration between **five** countries - Bangladesh, Bhutan, India, Nepal and Sri Lanka from South Asia and **two** countries - Myanmar and Thailand from South-East Asia. It is headquartered in **Dhaka, Bangladesh.**

175. (c) Amul, Gujarat Cooperative Milk Marketing Federation (GCMMF), has become the first Indian dairy firm to make a place in the Global Top 20 Dairy Companies list for the first time at No.16 released by Rabobank, a Dutch multinational banking and financial services company. According to the list, Switzerland's Nestle topped the list with a turnover of US $22.1 billion. Amul has achieved an annual turnover of $5.5 billion.

176. (a) Sports Minister Anurag Thakur in 2021 launched the Fit India mobile app, a personal trainer-cum-fitness guide, on the occasion of the second anniversary of the Fit India Movement. It was launched on the National Sports Day (29th August), which is celebrated to mark the birth anniversary of hockey legend Major Dhyan Chand.

177. (d) The BH series or the Bharat Series is a series of number plates for non-transport vehicles introduced in India on 28th August 2021. The citizens to register for BH-series must come under the following criteria: Defence personnel; employees under State/ central government/ PSUs and private companies with offices in more than four states or UTs.

178. (d) NITI Aayog and Ministry of Development of North Eastern Region have launched the North Eastern Region District SDG Index Report and Dashboard 2021–22, with technical support from UNDP. The index is based on NITI Aayog's SDG India Index.

According to the report, the East Sikkim district of Sikkim has topped the North Eastern Region (NER) District SDG Index 2021-22.

179. (c) India has won the elections for membership of two key bodies of the Universal Postal Union (UPU)- Council of Administration(CA) and Postal Operations Council (POC), during the 27th UPU Congress in Abidjan, Côte d'Ivoire. It was founded on 9 October 1874 at Bern, Switzerland. The current Director-General of UPU is Masahiko Meteko.

180. (d) In August 2021, RBI **extended the scope of tokenisation to include consumer devices – laptops, desktops, wearables (wrist watches, bands, etc.), Internet of Things (IoT) devices, etc.** The central bank has placed the ultimate **responsibility for** the **card tokenisation** services rendered on the authorised **card** payment networks.

181. (d) Ministry of Textile and National Institute of Fashion Technology (NIFT), New Delhi launched an India size survey, in order to do away with the confusion of size. It has been titled as INDIAsize. The survey was officially launched on August 26, 2021.

182. (b) Shri Neeraj Sinha, Additional Director General, Bureau of Police Research and Development (BPR-D) and Prof. Anil D. Sahasrabudhe, Chairman, All India Council for Technical Education (AICTE) jointly launched MANTHAN-2021 on 26 August 2021. Manthan- 2021 is organized by Bureau of Police Research and Development (BPR&D) in coordination with the Innovation Cell of the Ministry of Education and AICTE.

183. (b) Union Minister for Health and Family Welfare Shri Mansukh Mandaviya took over charge as the Chairperson of Stop TB Partnership Board in August 2021. The Minister will hold the responsibility with immediate effect until 2024. The Stop TB Partnership is a **United Nations-**hosted partnership program that aims to fight against tuberculosis collectively.

184. (a) Union Minister of Finance and Corporate Affairs, **Nirmala Sitharaman** has unveiled the fourth edition of the **Public Sector Bank (PSB) Reforms Agenda 'EASE 4.0'** for 2021-22. The major theme for EASE 4.0 is **"Technology-enabled, simplified, and collaborative banking."** EASE stands for **Enhanced Access & Service Excellence (EASE).**

185. (d) **Global Manufacturing Risk Index** assesses the **most advantageous locations for global manufacturing** among **47 countries in Europe, the Americas and Asia-Pacific (APAC)** based on **four key parameters.** The index is released by the **US-based property consultant Cushman & Wakefield. China remains at number one position** followed by India at second and the **US at third position**, in the Global Manufacturing Risk Index, 2021.

186. (b) **The Economist Intelligence Unit, sponsored by NEC released the Safe Cities Index 2021, covering 60 major urban areas.** The Index was first released in **2015. Copenhagen,** the capital city of **Denmark topped the list. From India, New Delhi and Mumbai** were placed at **48th** and **50th** place respectively.

187. (d) Abhay Kumar Singh has been appointed as joint secretary in the Ministry of Cooperation which was recently formed with an aim to strengthen the cooperative movement in the country. The ministry is headed by Shri Amit Shah.

188. (d) Operation Devi Shakti was an operation of the Indian Armed Forces to evacuate Indian citizens and foreign nationals from Afghanistan after the collapse of the Islamic Republic of Afghanistan and the fall of Kabul, the capital city, to the Taliban.

189. (d) **Swedish** green steel venture **HYBRIT,** which had made the **'world's first'** customer delivery of steel produced without using coal. The steel was made using **Hydrogen Breakthrough Ironmaking Technology,** which uses 100% fossil-free hydrogen instead of coal and coke.

190. (b) In August 2021, India got its first 'highest' herbal park at Mana in Uttarakhand's Chamoli district. The park, situated at a height of **11000 ft**, was inaugurated at Mana Village, which is situated close to the Indo-China border.

191. (b) On 26 July 2021, Chief Minister of Haryana, Manohar Lal Khattar, announced that the Hisar airport will be named after Maharaja Agrasen. It has been renamed as the **Maharaja Agrasen International Airport**.

192. (a) **World Sanskrit Day,** (also known as **Sanskrit Diwas),** is celebrated every year since 1969 on Shraavanapoornima, which is the **Poornima day of the Shraavana month** in the Hindu calendar, which is also marked as **Raksha Bandhan.** The day commemorates the ancient Indian language of Sanskrit and aims to promote its revival and maintenance.

193. (d) NITI Aayog has developed the pipeline, in consultation with infrastructure line ministries, based on the mandate for 'Asset Monetisation' under Union Budget 2021-22. It **aims to unlock value in brownfield projects by engaging the private sector**. The National Monetisation Pipeline (NMP) estimates an aggregate monetization potential of Rs 6 lakh crores through

core assets of the Central Government, over a period of four years from FY 2022 to FY 2025.

194. (a) As a part of commemorative activities for 'Azadi Ka Amrut Mahotsav', symbolising 75 years of Independence, an All Women Tri-Services Mountaineering Team summated and mounted the national flag at Mt Manirang (21,625 ft) on 15 August 2021. Mt Manirang is one of the highest peaks of Himachal Pradesh, nestled at the border of Kinnaur & Spiti districts. Close to the peak is the Manirang pass, which was one of the early trade routes between Spiti and Kinnaur, before the motorable road was built. The 15-member expedition team was led by Wing Commander Bhavana Mehra of the Indian Air Force.

195. (c) Maki Kaji was a Japanese businessman who was the president of Nikoli, a puzzle manufacturer. He is widely known as "the father of Sudoku" for his role in popularizing the number game.

196. (c) A total of **144** gallantry awards were approved by President Kovind on 15th August, 2021. The awards include one Ashok Chakra, one Kirti Chakra, 15 Shaurya Chakras, four Bar to Sena Medals (Gallantry), 116 Sena Medals (Gallantry), five Nao Sena Medals (Gallantry) and two Vayu Sena Medals (Gallantry).

197. (d) In August 2021, Former U-19 World Cup-winning captain Unmukt Chand announced his retirement from Indian cricket to seek better opportunities around the world.

198. (a) The Vice President of India Shri M Venkaiah Naidu unveiled the foundation stone of Innovation and Development Centre of Jawaharlal Nehru Centre for Advanced Scientific Research, JNCASR in Bengaluru in August 2021.

199. (b) Four new sites have been added to the list of Ramsar Sites in India in August 2021. These are: **Sultanpur National Park – Gurugram, Haryana. Bhindawas Wildlife Sanctuary – Jhajjar, Haryana; Thol and Wadhwana lake from Gujarat. 1 site from UP added in December 2021 and two sites in February 2022. In July 2022 five more sites were added taking the total ramsar sites to 54.**

200. (b) **Ministry of Women and Child Development** has launched the **2nd phase of the SAMVAD programme, SAMVAD 2.0**. It stands for **Support, Advocacy & Mental health interventions** for children in **Vulnerable circumstances and Distress (SAMVAD).**