

Amrita Common Aptitude test (ACAT) Mock

Time: 150 Minutes

Number of Questions: 100

Important Instructions

1. This paper contains 100 questions divided into 4 sections.

Section I: Quantitative Aptitude (25 questions)

Section II: Verbal Reasoning & Language Comprehension (25 questions)

Section III: Data Interpretation & Analysis (25 questions)

Section IV: General Knowledge on Indian & Global Scenarios (25 questions)

2. Each question has four choices of answers.
3. There is only one correct answer to each question.
4. You will be awarded 3 marks for each correct answer.
5. Each wrong answer will attract a penalty of one mark.

Quantitative Aptitude

9. If $a + b + c = 0$, then find the value of $\log_2 \left[\frac{2}{x^{a+b}} \times \frac{2}{x^{b+c}} \times \frac{2}{x^{a+c}} \right]$.

(a) 0 (b) 3 (c) 1 (d) None of these

10. Two friends – A and B – start at the same time from the same point on a circular track in opposite directions. The ratio of the speed of A to that of B is 3 : 4. If they interchange their speeds after they meet for the first time, then what is the ratio of the distance travelled by A to that by B by the time they are diametrically opposite to each other for the second time?

(a) 3 : 4 (b) 10 : 11 (c) 11 : 10 (d) 4 : 3

11. Heena and Meena can do a piece of work in 12 and 15 days respectively. They started the work together and were joined by Reena after 2 days. If the work was completed a day before the scheduled date, then in how many days can Reena alone do the work?

(a) 20 (b) 28.22 (c) 24.44 (d) 15

12. The length of the side of a rhombus is 10 cm and the length of one of its diagonals is 12 cm. What is the length (in cm) of the other diagonal?

(a) 15 (b) 20 (c) 16 (d) 12

13. A shopkeeper makes a profit of 20% on selling a radio for Rs. 840, whereas he makes a loss of 4% on selling another radio for Rs. 960. His total gain or loss percentage is

(a) $5\frac{15}{17}\%$ loss (b) $5\frac{15}{17}\%$ gain (c) $6\frac{2}{3}\%$ gain (d) None of these

14. When N is divided by N1, the remainder is 23. When 3N is divided by N1, the remainder is 31. What is the value of N1?

(a) 41 (b) 59 (c) 35 (d) 38

15. A container contains 10 liters of water- milk solution, with water and milk in the ratio 2 : 3. X liters of the solution is taken out and replaced with $X + 2$ liters of water. If the ratio of water to milk in the resulting solution is 3 : 2, then find the value of X.

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

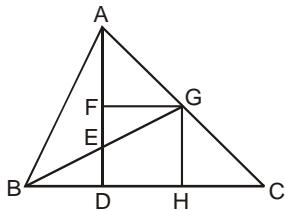
16. In a group of certain men, 20% play tennis and 80% are aged 50 years or less. If 20% of the men who are aged above 50 years play tennis, then what percentage of the men who play tennis are aged 50 years or less?

(a) 15 (b) 20 (c) 80 (d) 70

17. $x^2 \times y^3 = 147$, where x and y are positive real numbers. Find the minimum value of $6x + 7y$.

(a) 35 (b) 70 (c) $5\sqrt{7}$ (d) 49

18. In the figure given below, AD is an altitude to side BC of triangle ABC and DFGH is a square. If $BG = 13 \text{ cm}$ and $EF : ED = 5 : 7$, what is the area (in cm^2) of square DFGH?



Verbal Reasoning & Language Comprehension

Directions for questions 26 to 29: Read the following passage and answer the questions that follow.

When speaking here of Darwinism, I shall speak always of today's theory—that is Darwin's own theory of natural selection supported by the Mendelian theory of heredity, by the theory of the mutation and recombination of genes in a gene pool, and by the decoded genetic code. This is an immensely impressive and powerful theory. The claim that it completely explains evolution is of course a bold claim, and very far from being established. All scientific theories are conjectures, even those that have successfully passed many severe and varied tests. The Mendelian underpinning of modern Darwinism has been well tested, and so has the theory of evolution which says that all terrestrial life has evolved from a few primitive unicellular organisms, possibly even from one single organism.

He explained that the difficulty of testing had led some people to describe natural selection as a tautology, and that he too had in the past described the theory as 'almost tautological', and had tried to explain how the theory could be untestable (as is a tautology) and yet of great scientific interest.

My solution was that the doctrine of natural selection is the most successful metaphysical research programme. It raises detailed problems in many fields, and it tells us what we would expect of an acceptable solution of these problems. I still believe that natural selection works in this way as a research programme. Nevertheless, I have changed my mind about the testability and logical status of the theory of natural selection; and I am glad to have an opportunity to make a recantation.

26. The claim that the theory of natural selection explains evolution is far from being established because

- (a) it is a tautology.
- (b) it is a conclusion based on incomplete information.
- (c) it is a metaphysical research program.
- (d) it is supported by the Mendelian theory of heredity.

27. By *recantation* the author means

- (a) revelation
- (b) repercussion
- (c) retraction
- (d) ramification

28. If the author were to continue this passage, which of the following sentences would begin the next paragraph?

- (a) Thus, not all phenomena of evolution are explained by natural selection alone.
- (b) Yet in every particular case, it is a challenging research program to show how far natural selection can possibly be held responsible for the evolution.
- (c) The theory of natural selection may be so formulated that it is far from tautological.
- (d) In the debate, both sides and even courts in their decisions have frequently invoked Popper's criterion of falsifiability.

29. What is the author's attitude towards the theory of natural selection?

- (a) He questions its veracity
- (b) He questions its virtuosity
- (c) He questions its vapidity
- (d) He questions its verifiability

Directions for question 30: In the question below, there are four statements P, Q, R and S that have to be arranged in a logical order to form a coherent paragraph between statements S1 and S6.

S1: Hord said there are no evidence-based standards for omega-3 intake and no way to tell who might be at health risk.

P: This is necessary in order for us to know who is eating adequate amounts of these nutrients and who may be deficient or eating too much.

Q: "As is all true with any nutrient, taking too much can have negative effects."

R: "We're not against using fish oil supplements appropriately, but there is a potential for risk," he said.

S: We need to establish clear biomarkers through clinical trials.

S2: "Until we establish valid biomarkers of omega-3 exposure, making good evidence-based dietary recommendations across potential dietary exposure ranges will not be possible."

- (a) QSRP
- (b) RQSP
- (c) QPRS
- (d) SPQR

Directions for question 31: A number of sentences are given below, which when properly sequenced, form a coherent paragraph. Choose the most logical order of sentences from the choices given to construct a coherent paragraph.

P: They sprout earlier, to the detriment of native species.

Q: After mild winters, the native species run a higher risk of developing their leaves too late.

R: In that case, more daylight reaches the forest floor, and that benefits lower-growing shrubs and invasive tree species.

S: There may be consequences for the forest ecosystem.

- (a) QRPS
- (b) QRSP
- (c) PRQS
- (d) SQRP

Directions for question 32: Rearrange the following sentence fragments (P, Q, R and S) in order to make a meaningful sentence.

P: of its host star, Kepler 78, the scientists

Q: is about 1.7 times as massive as Earth

R: by analyzing the movement

S: determined that the exoplanet

Directions for questions 33 and 34: Choose the correct option.

33. The type of tone in which an author expresses his disapproval of someone / something is called...

(a) apathetic (b) sardonic (c) derisive (d) cynical

34. Hemophobia means

(a) Fear of blood (b) Fear of humans (c) Fear of hospitals (d) Fear of hair

Directions for questions 35 and 36: In the given paragraph, choose the correct synonymous word for each italicized word.

India has good reasons to feel beholden to the Hasina government, though the diplomats are not oblivious to the anti-incumbency she faces. But if Washington has a choice in Dhaka, how can it deny India having a right to its own choice of a friend? The US feels a BNP-led government will serve its strategic interests and may help it stop Chinese *inroads* into the country. For Delhi, the real worry is Jamaat-e-Islami and Hefazat-e-Islam. Delhi has good reasons to fear such a dispensation as likely to be *inimical* to its security.

35. (a) bothered (b) ignorant (c) attentive (d) interested

36. (a) routes (b) crossroads (c) incursions (d) imports

Directions for questions 37 and 38: In the questions below, the sentences have been given in Active/Passive voice. From the given alternatives, choose the one which best expresses the given sentence in Passive/Active voice.

37. The woman must have eaten ten chocolates.

- (a) Ten chocolates must had been ate by the woman.
- (b) Ten chocolates might have been eaten by the woman.
- (c) Ten chocolates must have been eaten by the woman.
- (d) Ten chocolates were eaten by the woman.

38. We are going to watch a documentary tonight.

- (a) A documentary will be watched tonight.
- (b) A documentary is going to be watched by us tonight.
- (c) At night, we are going to watch a documentary.
- (d) At night, we are going on to watch a documentary.

Directions for questions 39 and 40: Choose the grammatically correct option from the following.

39. (a) It is we children who are the incarnation of God.
(b) It is us children who are the incarnation of God.
(c) They are us children who are the incarnation of God.
(d) It is we children whom are the incarnation of God.

40. (a) Shilpy looks well in that suit. (b) Shilpy looks good in that suit.
(c) Well-looking Shilpy is in that suit. (d) That suit looks well on Shilpy.

Directions for questions 41 and 42: Choose the word that is the exact opposite of the given word.

41. Debacle
(a) Calamity (b) Debut (c) Smash (d) Blockbuster

42. Disavow
(a) Refute (b) Disallow (c) Concede (d) Refund

43. Mr. X: The upcoming elections in Delhi are going to bring up extremely interesting results. Opinion polls indicate that while the present Chief Minister, Ms. Dhristi, is still the most popular candidate for the most coveted position in the Delhi government, a new entrant in the political scene, Mr. Akshay, is set to give the chief minister a strong run for the seat.

Mr. Y: I feel your analysis is incorrect. It is true that Mr. Akshay is a new candidate and seems like a popular choice with the people. However, he has no experience in politics, let alone in handling a complex and large constituency like Delhi.

What can be inferred from Mr. Y's remark?

- (a) The elections in Delhi are being contested by strong candidates and the polls are expected to throw up some surprising results.
- (b) Because of his lack of political experience, Mr. Akshay is not a strong candidate in a constituency like Delhi.
- (c) People are slated to vote for Ms. Dhristi as they are satisfied with the way she has been running the government in Delhi.
- (d) Opinion polls are usually incorrect and the popular choice may not always emerge as the winner in the elections.

44. UK immigration laws have recently been amended and have become a source of debate for parliamentarians, immigrants and activists. Under rules that came into force a year ago, only a British citizen, who could show that he/ she earns at least £18,600 a year, could sponsor his / her non-European spouse's visa. This amount rises to £22,400 for families with one child and a further £2,400 for each further child. The result of this recent amendment is that thousands of Britons have been unable to bring a non-EU spouse to the UK since July 2012, the time when minimum earnings requirements were introduced.

Among the following given options, choose the one which best supports the new rules.

- (a) Over a period of time, the regulations will be adjusted in light of the experiences and learning that accrue from various cases.
- (b) The new rules were designed to ease the burden of migration on the taxpayer.
- (c) The government had promised to bring down net immigration into Britain and hence, the recent reforms on family immigration.
- (d) Evidence suggests that last year at least 47 per cent of the UK's working population would have failed to meet the minimum income level required to sponsor a non-European Economic Area partner.

45. Ajay Patel has applied as an international student to the prestigious Peyward University in the United States. As part of the admission guidelines, Ajay is advised to complete and submit his application as soon as possible and specifically before June 30. This would ensure full and timely consideration of his application. Until Ajay does so, his application would not be transmitted to the Peyward Admissions Office. Failure to submit the application before the submission deadline of June 30 would result in the application being sent to Clearing and not being considered in the admissions process. Ajay also found out on student forums that, each year, many candidate applications are rejected by Peyward due to non adherence to the submission deadline.

Which of the following options can be inferred from the above situation?

- (a) Ajay has a reasonably good chance of being accepted in Peyward if his application adheres to the set guidelines.
- (b) Peyward receives a large number of applications each year and can hence pick and choose amongst the best candidates.
- (c) Despite the admission guidelines set by Peyward University, there are many students who are unable to adhere to the application deadline.
- (d) Applications by candidates are considered only after they have passed through acceptable standards of assessment.

46. The mid-day meal scheme of the Indian government serves a regressive purpose. Instead of encouraging parents to send their children to government schools to improve their standards of living, the scheme results in low standards amongst the educational institutions. The scheme assures schools of a higher student enrolment and hence schools pay little attention to other factors, which eventually results in low standards of teaching and poor infrastructure. Government schools must hence be encouraged to set their own standards and the mid-day meal scheme should be discontinued.

Which of the following is an assumption that the argument most strongly depends on?

- (a) The mid-day meal scheme has not been correctly implemented and the quality of education has suffered because of corrupt government officials and middle men.
- (b) The mid-day meal scheme was not intended to be the most important factor in assuring quality education for all.
- (c) In states where the mid-day meal scheme has been successfully running for over two decades, there has been a parallel improvement in educational standards.
- (d) Government schools are more interested in increasing student enrolments than in improving their standards of teaching.

Directions for questions 47 and 48: Each question has a set of four sequentially ordered statements. Each statement can be classified as one of the following:

- Facts, which deal with pieces of information that one has heard, seen or read, and which are open to discovery or verification (the answer option indicates such a statement with an 'F').
- Inferences, which are conclusions drawn about the unknown, on the basis of the known (the answer option indicates such a statement with an 'I').
- Judgments, which are opinions that imply approval or disapproval of persons, objects, situations and occurrences in the past, the present or the future (the answer option indicates such a statement with a 'J')

Select the answer option that best describes the set of four statements.

47. 1. The San Diego/Tijuana area is sometimes used by drug smugglers.

2. The tunnel, recently dug under the U.S.-Mexican border, is associated with the Sinaloa drug cartel.

3. Last year, the Sinaloa drug cartel spent over 30 million dollars, trying to create a secret underworld of passages.

4. Thousands of innocent people may fall prey to this dirty business.

(a) JFFF

(b) FFFJ

(c) JF1J

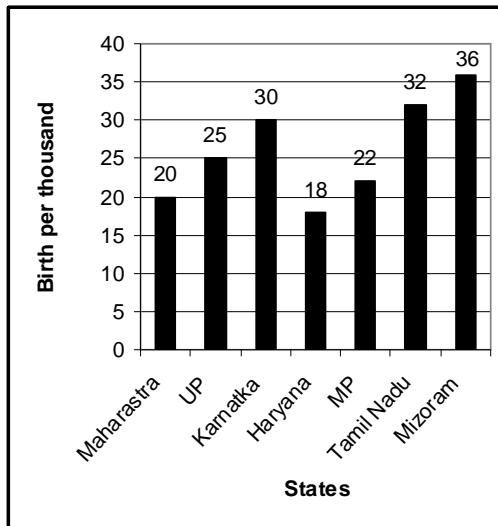
(d) FFIJ

Directions for questions 49 and 50: Each of the following questions consists of a set of numbered statements. Assume that each one of these statements is individually true. Each of the four given choices consists of a subset of these statements. Choose that subset as your answer wherein the statements are logically consistent among themselves.

Data Interpretation & Analysis

Directions for questions 51 to 54: Study the bar graph carefully and answer the questions.

The bar graph shows the birth rate of 7 states of a country.



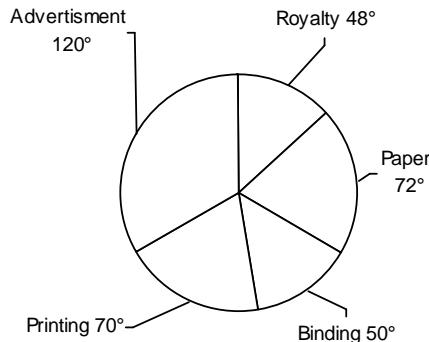
51. Birth rate of how many states are atleast 25% more than that of UP?
(a) 0 (b) 1 (c) 2 (d) More than 2

52. Birth rate of MP is what percent that of Tamil Nadu?
(a) 34.45 (b) 52.25 (c) 68.75 (d) 76.50

53. Birth rate of Karnataka is what times that of Haryana?
(a) 2 (b) 1.33 (c) 1.67 (d) 2.5

54. Approximate average birth rate of given 7 states is
(a) 26 (b) 28 (c) 32 (d) 34

Directions for questions 55 to 58: The following pie-chart shows the different expenses – Royalty, Paper, Binding, Printing and Advertisement – of a publisher on the production and sales of a book. Assuming that total expense of the publisher is Rs.525.

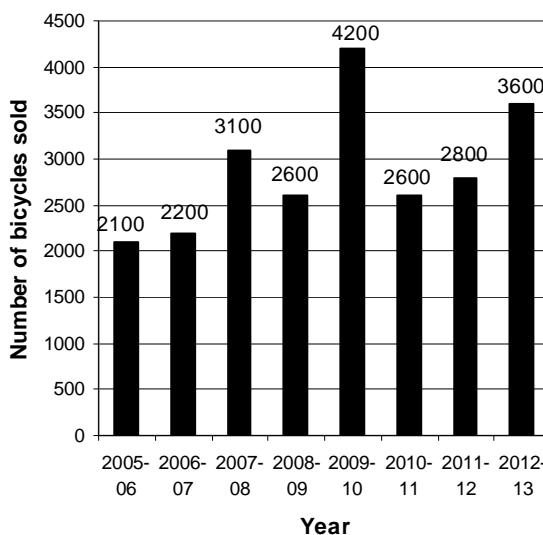


Directions for questions 59 to 61: Study the following table and answer the questions.

The table below shows the sales volume of three types of batteries (in '000) manufactured by a company named GENPEK Pvt. Ltd. during the period 2006-2012.

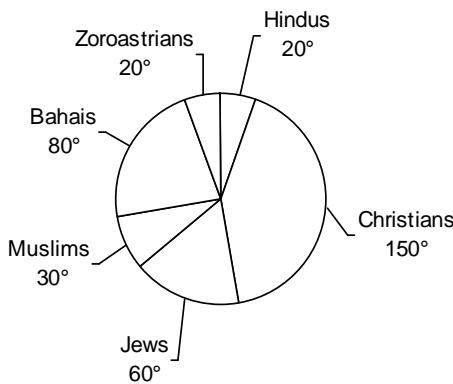
Year	B1	B2	B3	Total sales
2006	50	80	60	190
2007	65	70	100	235
2008	95	60	75	230
2009	75	80	40	195
2010	55	75	120	250
2011	35	60	65	160
2012	60	85	90	235

Directions for questions 62 to 64: Shown below is the bar diagram depicting the number of bicycles sold by a shop in the period of 2005–06 to 2012–13.



Study the above bar diagram and answer the questions.

Directions for questions 65 to 67: The following pie-chart shows the proportion of people of different religions in a city. Study the graph and answer questions.

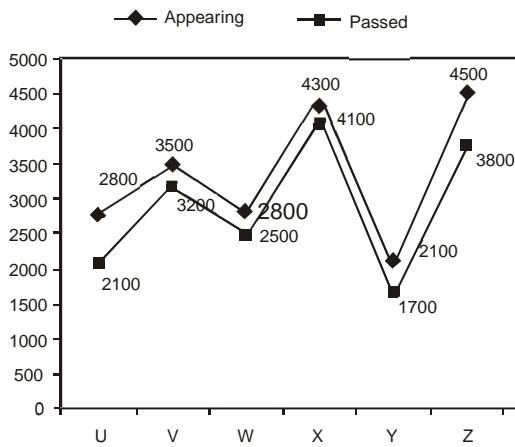


65. If the number of Christians in the city is 5,00,000, then the approximate sum of the number of Hindus and Zoroastrians is
 (a) 133333 (b) 133568 (c) 133435 (d) 143567

66. What percentage of the Christians is the number of Bahais in the city?
 (a) $59\frac{2}{3}\%$ (b) $43\frac{2}{3}\%$ (c) $53\frac{1}{3}\%$ (d) $57\frac{1}{3}\%$

67. What is the total population of the city if the number of Jews is 1,00,000 more than that of the Muslims?
 (a) 16,00,000 (b) 12,00,000 (c) 24,00,000 (d) 18,00,000

Directions for questions 68 to 71: The graph shows the number of students appearing for the final exam in the year 2015 and the number of students who pass their exam, from six colleges in Delhi. Study the graph and answer the questions.



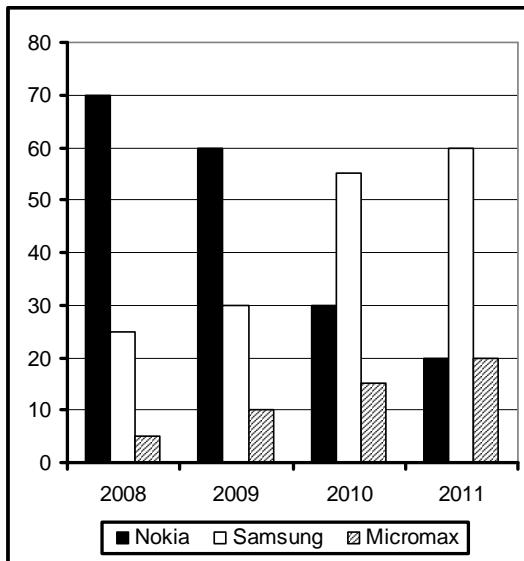
68. What is the difference between the passing percentage points of college Z and college V?
 (a) 5.29 (b) 6.99 (c) 7.39 (d) 7.69

69. What was the percentage of failure in all the colleges put together?
 (a) 25% (b) 22.5% (c) 13% (d) 42.5%

70. The number of students appearing for the exam in college Y is what percentage of the total number of students appearing for the exam in U, V and W put together?
 (a) 23.08% (b) 32.98% (c) 17.53% (d) 41.75%

71. What is the ratio of the total number of students who passed and those who failed from all the six colleges put together?
 (a) 17 : 29 (b) 86 : 13 (c) 87 : 13 (d) 87 : 31

Directions for questions 72 to 74: The following bar graph shows the percentage of the number of mobile handsets of three brands—Nokia, Samsung and Micromax—sold in a city during the period 2008 to 2011. Examine the bar graph and answer the questions.

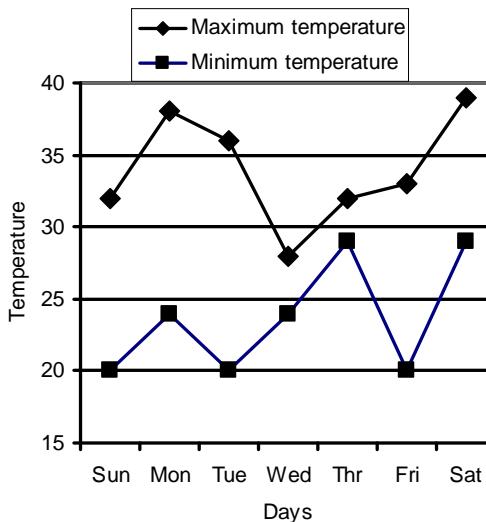


72. If the total number of mobile handsets sold in 2008 was 12 crores, then the total number of handsets sold by two brands Nokia and Micromax in that year was
 (a) 6,40,00,000 (b) 7,80,00,000 (c) 8,40,00,000 (d) 9,00,00,000

73. If the total number of mobile handsets sold in 2009 was 12 crores, then the number of handsets sold by Samsung in that year was
 (a) 4,20,00,000 (b) 2,80,00,000 (c) 3,60,00,000 (d) 4,40,00,000

74. Ratio of the number of mobile handsets sold by Nokia and Samsung in 2010 was
 (a) 3 : 5 (b) 6 : 11 (c) 3 : 4 (d) 5 : 11

75. The following line graph represents the maximum and minimum temperatures recorded every day in a certain week. On which day was the difference between the maximum and minimum temperatures maximum?



General Knowledge on Indian & Global Scenarios

88. Which group has launched a plan named 'Global Shield' at the 27th UN Climate Change Conference?

(a) G20 (b) NATO
(c) G7 (d) QUAD

89. President Droupadi Murmu has earlier served as a Governor of which of the following states?

(a) Odisha (b) Bihar
(c) Jharkhand (d) West Bengal

90. Severe Cyclonic Storm Asani was a strong tropical cyclone that made landfall in India in May 2022. Cyclone Asani was named by_____.

(a) Sri Lanka (b) Bangladesh
(c) Nepal (d) Bhutan

91. Voting in an Indian Presidential Election is through:

(a) A first-past-the-post system through a single transferable vote cast in a secret ballot
(b) A proportional representation system through a single transferable vote cast in a secret ballot
(c) A proportional representation system through a single transferable vote cast in an open ballot
(d) A first-past-the-post system through a single transferable vote cast in an open ballot

92. Match List-I with List-II and select the best option using the code given below the lists:

List-I (Tribe)	List-II (States)
I. Hatti	A. Himachal Pradesh
II. Kurivikkaran	B. Tamil Nadu
III. Binjhia	C. Chhattisgarh
IV. Kadu Kuruba	D. Karnataka

(a) (I)-(B), (II)-(A), (III)-(C), (IV)-(D) (b) (I)-(C), (II)-(D), (III)-(A), (IV)-(B)
(c) (I)-(D), (II)-(C), (III)-(B), (IV)-(A) (d) (I)-(A), (II)-(B), (III)-(C), (IV)-(D)

93. Which has approved a deal that will provide a \$3bn support package to cash-strapped Egypt over almost four years in December 2022?

(a) International Monetary Fund (b) World Bank
(c) World Trade Organization (d) Asian Development Bank

94. The bio-decomposer technology to avoid stubble burning around the Delhi NCR was developed by:
(a) Monsanto (b) Cargill
(c) Biocon (d) ICAR, Pusa Campus

95. On the evening of 24 March 2020, the Government of India ordered a nationwide lockdown for 21 days, limiting movement of the entire population of India as a preventive measure against the COVID-19 pandemic in India. It was imposed under the_____.
(a) Article 352 of the Indian Constitution (b) Article 356 of the Indian Constitution
(c) Disaster Management (DM) Act, 2005 (d) Article 360 of the Indian Constitution

96. This person was once named "the world's youngest self-made female billionaire" by Forbes magazine and is the founder of the company Theranos. What is the name of this person?
(a) Elizabeth Holmes (b) Eren Ozmen
(c) Fan Hongwei (d) Diane Hendricks

97. Goods and Services Tax (GST) came into effect from 1 July 2017 through the implementation of the_____.
(a) One Hundred and First Amendment of the Constitution of India
(b) One Hundred and Second Amendment of the Constitution of India
(c) One Hundred and Third Amendment of the Constitution of India
(d) One Hundred and Fourth Amendment of the Constitution of India

98. The Reserve Bank of India recently announced the launch of 'Digital Rupee —Wholesale Segment', a form of which of the following?
(a) Digi Suvidha (b) Virtual Wallet
(c) Central Bank Digital Currency (d) Cyber Rupee

99. Which of the following books is not authored by Jawaharlal Nehru?
(a) The Discovery of India (b) India of My Dreams
(c) Letters from a Father to His Daughter (d) Glimpses of World History

100. The 2022 FIFA World Cup won by which of the following countries?
(a) France (b) Portugal
(c) Argentina (d) Croatia