INS/20

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO.

2021

TEST BOOKLET

Time allowed : $1\frac{1}{2}$ hours

Full marks : 100

Answer ***all*** the questions.

Questions are of equal value.

TEST BOOKLET SERIES

D

Serial No. 10824 ..... ***Roll No.:***

Signature of the Candidate:

INSTRUCTIONS

Candidates should read the following instructions carefully before answering the questions:

1. This booklet consists of 12 pages including this front page. **Verify the Page Nos. and Test Booklet series on each page and bring at once to the Invigilator's notice any discrepancy.**
2. Answers will have to be given in the Special Answer-Sheets supplied for the purpose.
3. Before you proceed to mark in the Answer-Sheet in response to various items in the Test Booklet, you have to fill in some particulars in the Answer-Sheet as per instructions sent to you in the Admit Card. ***Do not fold the Answer-Sheet as this will result in error in your marks.***
4. All questions are of multiple-choice answer-type. You will find ***four*** probable answers **(A)**, **(B)**, **(C)** and **(D)** against each question. Find out which of the four answers appears to you to be **correct or the best**. Now darken the circle corresponding to the letter of the selected answer in the Answer-Sheet with **Black Ball Point Pen** as per instructions printed on the reverse of the Admit Card and in the Answer-Sheet.
5. One and only one circle is to be fully blackened for answer. Any spot in any other circle (multiple circle) or in wrong circle will be considered as wrong answer.
6. ***There will be negative marking for wrong answers. $\frac{1}{3}$ mark will be deducted for each wrong answer.***
7. ***There is a blank page at the end of this Booklet for Rough Work.***
8. ***The Special Answer-Sheet should be handed over to the Invigilator before leaving the Examination Hall. You are permitted to take away the used Test Booklet after completion of the examination.***

1. GUI stands for

(A) Graphical User Interface

(B) Graph Use Interface

(C) Graphical Universal Interface

(D) Graphical Unique Interface

2. Find the missing term:

8, 13, 21, 32, ?, 63

(A) 47

(B) 45

(C) 46

(D) 48

3. Which type of energy stored in the Spring of a Watch?

(A) Heat Energy

(B) Potential Energy

(C) Kinetic Energy

(D) Chemical Energy

4. Present ages of Sameer and Anand are in the ratio of 5 : 4 respectively. Three years later, the ratio of their ages will become 11 : 9 respectively. What is Anand's present age in years?

(A) 24

(B) 28

(C) 40

(D) 32

5. A person is hurt on kicking a stone due to

(A) Inertia

(B) Velocity

(C) Momentum

(D) Reaction

6. The mean of 100 items was found to be 30, if at the time of calculation, two items were wrongly taken as 32 and 12 instead of 23 and 11. The correct mean is

(A) 29.4

(B) 29.5

(C) 29.8

(D) 29.9

7. Complete the sentence choosing the correct option among the following:

I felt somewhat more relaxed _____.

(A) but tense as compared to earlier

(B) as there was already no tension at all

(C) and tension-free as compared to earlier

(D) because the worry had already captured by mind

8. Nuclear sizes are expressed in a unit named

(A) Fermi

(B) Angstrom

(C) Newton

(D) Tesla

9. Which of the following is a Scalar Quantity?

(A) Velocity

(B) Force

(C) Angular Momentum

(D) Electrostatic Potential

10. Curie is a unit of

(A) Temperature

(B) Luminous Intensity

(C) Amount of a substance

(D) Radioactivity

11. Which of the following have the same unit?

(A) Work and Power

(B) Torque and Moment of Inertia

(C) Work and Torque

(D) Torque and Angular Momentum

12. A particle is moving in a uniform circular motion with constant speed v along the circle of radius r. The acceleration of the particle is:

(A) Zero

(B) v/r

(C) v/r^2

(D) v^2/r

13. Find the synonym of **Fostering**.

(A) Safeguarding

(B) Neglecting

(C) Ignoring

(D) Nurturing

14. Two pipes can fill a tank in 20 minutes and 26 minutes. An outlet pipe can empty the tank in 13 minutes. If all the pipes are opened simultaneously, in how many minutes will the tank become full?

(A) $87\frac{2}{3}$

(B) $86\frac{1}{3}$

(C) $87\frac{1}{3}$

(D) $86\frac{2}{3}$

15. Select the pair which has same/closest relationship.

Mace : Majesty

(A) Book : Knowledge

(B) Sword : Soldier

(C) Degree : Knowledge

(D) King : Crown

16. What option should fill the blank?

U 32, V 29, _____, X 23, Y 20.

(A) W 17

(B) W 26

(C) W 28

(D) W 27

17. Find the wrong term:

6, 15, 35, 77, 165, 221

(A) 165

(B) 35

(C) 221

(D) 77

18. One MB is equal to

(A) 1024 Byte

(B) 1024 KB

(C) 1000 KB

(D) 1024 GB

19. The average of four positive integers is 69. The highest integer is 93 and the least integer is 39. The difference between the remaining two integers is 28. Which of the following integers is the higher of the remaining two integers?

(A) 58

(B) 86

(C) 49

(D) 93

20. 'Tesla' is a unit of magnetic

(A) Flux

(B) Induction

(C) Moment

(D) Field

Please Turn Over

21. A sum of money is divided among three persons A, B and C in the ratio 3 : 4 : 1. If B got Rs. 3000, find the total sum distributed:

(A) Rs. 6000
(B) Rs. 8000
(C) Rs. 9000
(D) Rs. 12000

22. What is Young's Modulus of a perfectly rigid body?

(A) Infinity
(B) Zero
(C) One
(D) Null

23. What is the minimum Escape Velocity of a Rocket to be launched from earth to space?

(A) 2 km/s
(B) 9.8 km/s
(C) 11.2 km/s
(D) 18 km/s

24. Light from the Sun reaches us in nearly:

(A) 2 minutes
(B) 4 minutes
(C) 8 minutes
(D) 11 minutes

25. The smallest Union Territory of India is

(A) Andaman Nicobar
(B) Ladakh
(C) Lakshadweep
(D) Puducherry

26. Rocket works on the principle of:

(A) Newton's First Law of motion
(B) Newton's Second Law of motion
(C) Newton's Third Law of motion
(D) Archimedes' Principle

27. Change the narration:

Sabita said to me, "I will do it now or never."

(A) Sabita told me that I would do it then or never.
(B) Sabita told me that she would do it now or never.
(C) Sabita told me that she will do it now or never.
(D) Sabita told me that she would do it then or never.

28. Select the pair which has same/closest relationship:

TEN : DECIMAL

(A) Seven : Septet
(B) Four : Quartet
(C) Two : Binary
(D) Five : Quince

29. Find the correct meaning of the Idiom/ Phrase:

'To drive home'

(A) To find one's roots
(B) To return to place of rest
(C) Back to the original position
(D) To emphasise

30. Optic fibre is used in

(A) CT scan
(B) X ray
(C) USG
(D) Endoscopy

31. Find the correct meaning of the Idiom/ Phrase:

'To make clean breast of'

(A) To get prominence

(B) To praise oneself

(C) To confess without of reserve

(D) To destroy before it blooms

32. Find the synonym of **Assent**.

(A) Dissent

(B) Consent

(C) Judgment

(D) Adjacent

33. The average marks of a class of 20 students in a subject X is 30. The average marks of the students of top nine ranks is 40. The average marks of the students of last ten ranks is 21. How many marks does the student getting 10th rank from the top get?

(A) 20

(B) 30

(C) 35

(D) 25

34. Computer Virus is a

(A) Hardware

(B) Software

(C) Freewave

(D) Bacteria

35. The atmosphere layer reflecting radio waves is called

(A) Ozonosphere

(B) Ionosphere

(C) Stratosphere

(D) Mesosphere

36. What is the theme of India's 75th Independence Day?

(A) Nation first, Always first

(B) Atmanirvar Bharat

(C) Health care first

(D) Spirit, Employment and Initiative

37. A batsman in his 12th innings, makes a score of 63 runs and thereby increases his average score by 2. The average of his score after 12th innings is

(A) 41

(B) 42

(C) 34

(D) 35

38. A man sold an article at a loss of 20%. If he sells the article for Rs. 12 more, he would have gained 10%. The cost price of the article is

(A) Rs. 60

(B) Rs. 40

(C) Rs. 30

(D) Rs. 22

39. If 80% of A = 50% of B and B = x% of A, then the value of x is

(A) 400

(B) 300

(C) 160

(D) 150

40. Which athlete won the highest number of individual medals at Tokyo Olympic, 2020?

(A) Emma McKeon

(B) Daiya Seto

(C) Katie Ledecky

(D) Caeleb Dressel

Please Turn Over

41. Another term for Main Memory is

(A) Hard Disk

(B) ROM

(C) Floppy Disk

(D) RAM

42. What number should fill the blank?

11, 13, 17, 19, 23, 25, _____.

(A) 26

(B) 27

(C) 28

(D) 29

43. Find the antonym of **Turbulent**.

(A) Turbid

(B) Violent

(C) Steady

(D) Excellent

44. The ratio of the speeds of Kamal and Bimal is 6 : 5. If Kamal takes twelve minutes less than Bimal to cover a certain distance, then what is the time taken by Bimal to cover the distance?

(A) 72 min.

(B) 60 min.

(C) 48 min.

(D) 84 min.

45. Change the voice:

The boys were playing cricket.

(A) Cricket had been played by the boys.

(B) Cricket has been played by the boys.

(C) Cricket was played by the boys.

(D) Cricket was being played by the boys.

46. Mention the best sequence of the following words to get a meaningful sentence:

1. I 2. Immediately 3. Salary
4. my 5. want

(A) 15423

(B) 15432

(C) 15234

(D) 42351

47. A person falsely claims to have more knowledge or skill than he really has is called:

(A) Crook

(B) Apotheosis

(C) Renegade

(D) Charlatan

48. Which protocol provides e-mail facility among different hosts?

(A) FTP

(B) SNMP

(C) SMTP

(D) TELNET

49. Who was the first woman president of the Indian National Congress?

(A) Sarojini Naidu

(B) Sucheta Kripalini

(C) Indira Gandhi

(D) Annie Besant

50. Roshan invested Rs. 10000 at compound interest at 10% per annum for a period of 3 years. What amount will he get after 3 years?

(A) Rs. 12310

(B) Rs. 13120

(C) Rs. 13320

(D) Rs. 13310

51. Change the narration:

I said to him, "Why are you working so hard?"

(A) I asked him why he was working so hard.

(B) I asked him why you were working so hard.

(C) I asked him why had he been working so hard.

(D) I asked him why was he working so hard.

52. Find the correctly spelt word:

(A) Occasion

(B) Occassion

(C) Ocasion

(D) Ocassion

53. Who among the following won a gold medal in Javelin throw at Tokyo Para Olympics, 2020?

(A) Avani Lekhava

(B) Sumit Antil

(C) Pramod Bhagat

(D) Bhavina Patel

54. Nisha and Jaya both distribute Rs. 100 respectively in charity. Nisha distributes money 5 more people than Jaya and Jaya gives each Re. 1 more than Nisha. How many people are recipients of the charity?

(A) 45

(B) 60

(C) 90

(D) 50

55. Find the missing number:

1	2	3
11	7	5
120	45	?

(A) 19

(B) 17

(C) 16

(D) 15

56. The dimension of which of the following is the same as that of impulse?

(A) Volume

(B) Momentum

(C) Torque

(D) Change in the rate of momentum

57. Centigrade and Fahrenheit temperature are the same at

(A) 32°

(B) 40°

(C) –273°

(D) –40°

58. 16% of a number is 216. What is 27% of that number?

(A) 274

(B) 279

(C) 367.20

(D) 364.50

59. The basic architecture of computer was developed by

(A) Charles Babbage

(B) Garden Moore

(C) John Von Neumann

(D) Blaise Pascal

60. A boat is rowed downstream at 15.5 km/hr and upstream at 8.5 km/hr. The speed of the stream is

(A) 3.5 km/hr

(B) 5.75 km/hr

(C) 6.5 km/hr

(D) 7 km/hr

Please Turn Over

61. Fill in the blank:

Our sir teaches Mathemetics _____ English.

(A) across
(B) besides
(C) beside
(D) both

62. Find the antonym of **Ecstasy**.

(A) Busy
(B) Rapture
(C) Misery
(D) Currency

63. What is the fourth state of matter?

(A) Solid
(B) Liquid
(C) Plasma
(D) Gas

64. The word 'Insolation' means:

(A) Matter which insulate
(B) Incoming solar radiation
(C) Insoluble matters
(D) None of the above

65. _____ is the high speed memory used in the computer.

(A) RAM
(B) BIOS
(C) Hard Disk
(D) Cache

66. The unit of noise pollution is

(A) Decimal
(B) Hertz
(C) Decibel
(D) ppm

67. A is 50% as efficient as B, C does half of the work done by A and B together. If C alone does the work in 40 days, then, A, B and C together can do the work in.

(A) $13\frac{1}{3}$ days
(B) 15 days
(C) 20 days
(D) 30 days

68. What was the Mascot of Tokyo Olympics, 2020?

(A) Hodori
(B) Sumo
(C) Miraitowa
(D) Ikebana

69. The absorption of ink by blotting paper involves

(A) viscosity of ink.
(B) capillary action phenomenon.
(C) diffusion of ink through the blotting.
(D) siphon action.

70. Magnifying glass is basically a

(A) Concave lens
(B) Plano-concave lens
(C) Convex lens
(D) Cylindrical lens

71. USA won the maximum number of medals in Tokyo Olympic, 2020. How many medals did USA win?

(A) 114
(B) 123
(C) 113
(D) 103

72. Find the missing term:
589654237, 89654237, 8965423, 965423, ?
(A) 965426
(B) 96542
(C) 6965426
(D) 9654

73. A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?

(A) 3 hrs. 15 min.
(B) 3 hrs. 45 min.
(C) 4 hrs.
(D) 4 hrs. 15 min.

74. Gauri went to the stationers and bought things worth Rs. 25. Out of which 30 paise went on sales tax on taxable purchases. If the tax rate was 6%, then what was the cost of the tax free items?

(A) Rs. 15
(B) Rs. 15.70
(C) Rs. 19.70
(D) Rs. 20

75. International Youth Day is celebrated every year on which day?

(A) January,12
(B) August, 12
(C) October, 13
(D) April, 10

76. The sky appears blue due to:

(A) Rayleigh scattering
(B) Mie scattering
(C) Back scattering
(D) None of the above

77. Instrument to measure the force and velocity of the wind:

(A) Anemometer
(B) Ammeter
(C) Audiometer
(D) Altimeter

78. Stars appears to have from east to west because

(A) All stars move from east to west.
(B) The earth rotates from west to east.
(C) The earth rotates from east to west.
(D) None of the above

79. Find the missing term:
120, 99, 80, 63, 48, ?
(A) 35
(B) 36
(C) 34
(D) 33

80. The 0 and 1 in the binary numbering system are called

(A) Bytes
(B) Decimal Bytes
(C) Bits
(D) Kilo Bytes

81. 'Parsec' is the unit measurement of:

(A) Density of Stars
(B) Astronomical distance
(C) Orbital velocity of giant stars
(D) Brightness of heavenly bodies

82. Select the pair which has same/closest relationship:

PAIN : SEDATIVE

(A) Comfort : Stimulant
(B) Grief : Consolation
(C) Trance : Narcotic
(D) Ache : Extraction

83. Even if it rains I shall come-means:

(A) If I come it will not rain.
(B) If it rains I shall not come.
(C) I will certainly come whether it rains or not.
(D) Whenever there is rain I shall come.

84. A and B can together finish a work in 30 days. They worked together for 20 days and then B left. After another 20 days, A finished the remaining work. In how many days A alone can finish the job?

(A) 50
(B) 60
(C) 48
(D) 54

85. Find the correctly spelt word:

(A) Comitte
(B) Commitee
(C) Committee
(D) Comittee

86. One who studies insect life:

(A) Ornithologist
(B) Zoologist
(C) Entomologist
(D) Etymologist

87. Find the antonym of **Vivacity**.

(A) Beauty
(B) Sympathy
(C) Apathy
(D) Vitality

88. A sum was put at simple interest rate for 3 years. Had it been put at 2% higher rate, it would have fetched Rs. 360 more. Find the sum:

(A) Rs. 7000
(B) Rs. 8000
(C) Rs. 6000
(D) Rs. 10000

89. Who designed India's National flag?

(A) Dr. B.R. Ahmedkar
(B) Shri Aurobindo Ghosh
(C) Rabindra Nath Tagore
(D) Pingali Venkayya

90. Find the synonym of the underlined word.

They tolerated him though they disliked his **craven** behavior.

(A) Silly
(B) Rude
(C) Cowardly
(D) Indecent

91. Light year is a unit of:

(A) Time
(B) Distance
(C) Light
(D) Refractive Index

92. Mention the best sequence of the following words to get a meaningful sentence:

1. do 2. today 3. you
4. must 5. it

(A) 34152
(B) 32541
(C) 31425
(D) 25413

93. Microsoft Word is an example of:

(A) An operating system
(B) Processing Device
(C) Application Software
(D) System Software

94. Which of the following circuits is used as a "Memory Device" in Computers?

(A) Rectifier
(B) Flip Flop
(C) Attenuator
(D) Comparator

95. Umiam Multipurpose Power Project is located in

(A) Himachal Pradesh
(B) Sikkim
(C) Meghalaya
(D) Nagaland

96. Which of the following is a good conductor of electricity?

(A) Paper
(B) Kerosene
(C) Graphite
(D) Dry Air

97. Plank's Constant has the dimension of

(A) Energy
(B) Linier Momentum
(C) Angular Momentum
(D) Force

98. The metal is used in fabrication of a transistor is

(A) Aluminium
(B) Copper
(C) Silicon
(D) Silver

99. At what time between 7 and 8 o'clock, will the hands of a clock be in the same straight line, but not together?

(A) 5 min past 7
(B) $5\frac{2}{11}$ min past 7
(C) $5\frac{3}{11}$ min past 7
(D) $5\frac{5}{11}$ min past 7

100. Which of the following is a Vector Momentum?

(A) Speed
(B) Velocity
(C) Torque
(D) Displacement

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