



Centre for Development of Advanced Computing (C-DAC)

**Written Examination- Senior Assistant**

**Advertisement Number – CDACS/Group B/2023/001**

**Post Code - CDACS/SA/01**

Name of the Candidate: .....

Position Applied For: Senior Assistant

Roll No: .....

Date of Examination: 19<sup>th</sup> AUGUST, 2023 (Saturday)

.....  
(Signature of Invigilator)

.....  
(Signature of the Candidate)

**General Instruction**

1. No Electronic Gadgets including Mobile Phone (even in switched off condition) are allowed inside the Examination Hall.
2. Ball Pen (Blue/Black), Admit Card and Photo ID is allowed inside the examination hall.
3. For each correct answer 2 marks will be awarded and for each wrong answer 1 mark shall be deducted.
4. Rough Work (if any) can be done on rough sheets provided and no damage/ tearing or folding or doing rough work in OMR Sheet shall be acceptable. If found so, candidature is liable to be cancelled.
5. It is to be ensured that the OMR sheet is signed by candidate and countersigned by the invigilator before handing over the OMR sheet.
6. The Question Paper has four parts **Logical Reasoning and Numerical Ability (40 marks), General Knowledge (10 marks), English (50 marks) & Domain Knowledge 50 marks (HR/Admin/Finance/MMG). Total 150 marks.**
7. **Total Number of Questions -75**

# LOGICAL REASONING

1) If in a given number '376843658', 1 is added to all even digits and 1 is subtracted from all odd digits and then arrange them in ascending order from left to right, then what will be the sum of third digit from right end and second digit from left end?

(a) 10 (b) 9 (c) 11 (d) 8

2) If it is possible to make a meaningful word from 2nd, 3rd, 5th and 6th letters of word "LAVENDER", then which will be the 1st letter of the meaningful word? If no such word is formed, mark the answer as 'M'. If more than one word can be formed mark the answer as 'K'.

(a) M (b) N (c) D (d) K

3) In each of the following questions, arrange the given words in a meaningful sequence and then choose the most appropriate sequence from amongst the alternatives provided below each question.

1. College 2. Child 3. Salary 4. School 5. Employment

(a) 5,3,2,1,4 (b) 4,1,3,5,2

(c) 1,2,4,3,5 (d) 2,4,1,5,3

4) Samiksha ranked sixteenth from the top and twenty ninth from the bottom among those who passed an examination. Six boys did not participate in the competition and five failed in it. How many boys were there in the class?

(a) 40 (b) 44

(c) 55 (d) 56

5) Find the missing number

81 : 10 :: 169 : \_\_\_\_

a) 23 (b) 18

c) 12 (d) 14

6) If "!" denotes "added to", "@" denotes "divided by", "%" denotes "multiplied by" and "^" denotes "subtracted from", then

13 ! 102 @ 6 % 2 ^ 41 = \_\_\_\_

a) 6 (b) 9

c) 14 (d) 12

7) A machine codes EAT as 100 and CAT as 60. Which of the following words will be coded as 40320?...

a) BAIN (b) PAINT

c) HIGH (d) RAISE...

8) Find the missing number

39	48	117
3	4	9
13	12	?

a) 9 (b) 7 (c) 8 (d) 13

9) A clock is so placed that at 12 noon its minute hand points towards north-east. In which direction does its hour hand point at 1.30 p.m.?

(a) North (b) South

(c) East (d) West

10) Find the analogy

Cork: Pop:: Coins : \_\_\_\_

(a) Tinkle (b) Ring

(c) Rattle (d) Zoom

## NUMERICAL ABILITY

11) Two, trains, one from Howrah to Patna and the other from Patna to Howrah, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is:

- a) 2 : 3            b) 4 : 3  
c) 6 : 7            d) 9 : 16

12) A train overtakes two persons who are walking in the same direction in which the train is going, at the rate of 2 kmph and 4 kmph and passes them completely in 9 and 10 seconds respectively. The length of the train is:

- a) 45 m            b) 50 m  
c) 54 m            d) 72 m

13) Ayesha's father was 38 years of age when she was born while her mother was 36 years old when her brother four years younger to her was born. What is the difference between the ages of her parents?

- a) 2 years            b) 4 years  
c) 6 years            d) 8 years

14) Two students appeared at an examination. One of them secured 9 marks more than the other and his marks was 56% of the sum of their marks. The marks obtained by them are:

- a) 39, 30            b) 41, 32  
c) 42, 33            d) 43, 34

15) The product of two numbers is 9375 and the quotient, when the larger one is divided by the smaller, is 15. The sum of the numbers is:

- a) 380            b) 395  
c) 400            d) 425

16) A milk vendor has 2 cans of milk. The first contains 25% water and the rest milk. The second contains 50% water. How much milk should he mix from each of the containers so as to get 12 litres of milk such that the ratio of water to milk is 3 : 5?

- a) 4 litres, 8 litres            b) 6 litres, 6 litres  
c) 5 litres, 7 litres            d) 7 litres, 5 litres

17) In a box, there are 8 red, 7 blue and 6 green balls. One ball is picked up randomly. What is the probability that it is neither red nor green?

- a)  $1/3$             b)  $3/4$   
c)  $7/19$             d)  $8/21$

18) Find the odd one out

331, 482, 551, 263, 383, 362, 284

- a) 263            b) 383  
c) 331            d) 551

19) A boat running upstream takes 8 hours 48 minutes to cover a certain distance, while it takes 4 hours to cover the same distance running downstream. What is the ratio between the speed of the boat and speed of the water current respectively?

- a) 2 : 1            b) 3 : 2  
c) 8 : 3            d) Cannot be determined

20) The market value of a 10.5% stock, in which an income of Rs. 756 is derived by investing Rs. 9000, brokerage being 1 / 4%, is:

- a) Rs. 108.25            b) Rs. 112.20  
c) Rs. 124.75            d) Rs. 125.25

## GENERAL KNOWLEDGE

21) The Governor of a state in India is appointed by the \_\_\_\_\_

- a) Prime Minister
- b) President
- c) Chief Justice of India
- d) Chief Justice of the concerned state high court

22) The World Environment Day is celebrated through the world on \_\_\_\_\_ every year.

- a) May 8
- b) June 5
- c) July 11
- d) August 27

23) Which of the following is the largest and the deepest ocean of the world?

- a) Arctic
- b) Atlantic
- c) Pacific
- d) Indian

24) The ancient name of Assam is \_\_\_\_\_

- a) Koliabor
- b) Guwahati
- c) Pragjyotishpur
- d) Charaideo

25) Which one is the epicenter of the Assam silk industry?

- a) Majuli
- b) Mangaldoi
- c) Tangla
- d) Sualkuchi

- 1) Every day, since 1904, staff at the Kodaikanal Solar Observatory in Tamil Nadu have aimed their telescope at the sun, freezing the images of its disc. This data, spanning a hundred years and more, has now been digitised by astrophysicists from the Indian Institute of Astrophysics, Bengaluru, and made available to the public.
- 2) Apart from use in academic studies of long term behaviour of the sun, the data can be used to better understand sunspot activity which impacts climate and affects telecommunication systems. It also throws light on major events in the past which had an impact on the earth's magnetic field. "From that knowledge we may understand the current and future events with greater precision. This also allows us to predict future [sunspot] activity levels with better accuracy," says Dipankar Banerjee, IIAP, the Principal Investigator.
- 3) While 'spectroheliograms' were taken at the Kodai observatory in 1902, it was in 1909 that the data was used to discover the Evershed effect – that gases in the sunspots flowed radially outwards. The discovery by John Evershed put the KSO at par with the best observatories in the world. But its importance eventually declined as it was not upgraded or maintained. In a backhanded way, though, this turned out to be beneficial, because "the pictures had all been taken with the same instrument over the years, and this made it much easier to calibrate and digitise," says Sudip Mandal, a Ph.D student who has worked on the project.
- 4) The data is unique not only in that it spans a hundred years, but that there are three sets of images, taken using different filters – White light, H-alpha and Calcium-K. It is known that the sun has a layered structure, and each of these data sets exposes a different layer.
- 5) Under white light filtering, the sun's photosphere and the sunspots are visible, while the Calcium-K light can show layers some 2,000 km above this, in the chromosphere. The H-alpha images show up layers a little above the Calcium-K images. Features called "filaments" which are related to large expulsions of material from the sun's surface can be viewed in the sets.
- 6) Opening up the digitised data has attracted international attention: Max Planck Institute, Gottingen; National Astronomical Observatories of China, Beijing and Big Bear Solar Observatory, US are interested in studying the way the sun's luminosity changes. Though the sun appears to have a steady brightness, its luminosity actually undergoes changes over time. Some of the groups. The Big Bear Solar Observatory and the Beijing teams are interested in the H-alpha data in order to study the filaments that can be observed in those shots. Within India, groups from IUCAA, Pune; Physical Research Laboratory, Ahmedabad; and IISER, Kolkata, want to make studies.
- 7) A movie that the scientists made out of a sequence of hundreds of white light images shows how the sunspots appear and disappear periodically over an eleven-year cycle. Such movies offer immense possibilities for developing educational software, as classes of students can visually experience how the sun and the sunspots behave over

the years. Just like CERN offers its data to science hobbyists, for analysis that does not require much training and yet cannot be carried out without human intervention, this data, too, could be used by science fora in India to build citizen science projects.

- 8) The data was historically archived in photographic plates and film. After the digitisation, the images are preserved in high-resolution digital format. “We store it in FITS [flexible image transport system] which is the most commonly used digital file format,” clarifies Dr Banerjee.
- 9) The project which was initiated about six years ago by S.S. Hasan, then the director of IIAP, has succeeded in converting to digitised format some sixty-seventy thousand images previously stored in photographic plates. The team includes scientists and the big team of research assistants at the Kodaikanal lab.
- 10) At the moment, the group has released the “lowest level” or raw data and plans are on to eventually release the processed ones, too.

**(26). Consider the following statement regarding the ‘Kodaikanal Solar Observatory’:**

1. The data from observatory can be used to better understand sunspot activity which impacts climate.
2. The data from observatory can be used to better understand sunspot activity which affects telecommunication systems.

**Which of the following statements given above is/are correct?**

- (a) 1 only                      (b) 2 only
- (c) Both are correct      (d) None is correct
- (27) Where is Kodaikanal Solar Observatory located?
- (a) Kerala                      (b) Karnataka
- (c) Andhra Pradesh      (d) Tamil Nadu
- (28). The data collected by ‘Kodaikanal Solar Observatory’ has been digitised by
- (a) The Indian Institute of Technology
- (b) The Indian Institute of Astrophysics
- (c) The Tata Institute of Fundamental Research
- (d) None of the above
- (29). National Astronomical Observatories of China, Beijing and Big Bear Solar Observatory, US are interested in studying
- (a) Calcium-K light
- (b) The way the sun’s luminosity changes
- (c) White light
- (d) All of the above
- (30). Which of the following institutes in India want to make studies in the same field as National Astronomical Observatories of China, Beijing and Big Bear Solar Observatory, US?
- (a) IISER, Kolkata      (b) IUCAA, Pune
- (c) Physical Research Laboratory, Ahmedabad
- (d) All of the above

(31) Choose the word which is Most Opposite to the word “**Radially**” in the passage.

- (a) Spiral                      (b) Spreading  
(c) Spoked                      (d) Asymmetric

(32) Choose the word which is Most Similar to the word “**Calibrate**” in the passage.

- (a) Overhaul                      (b) Disorganize  
(c) Damage                      (d) derange

(33) Choose the word which is Most Opposite to the word “**Expulsions**” in the passage.

- (a) Banishment                      (b) Discharge  
(c) Debarment                      (d) Import

(34) Choose the word which is Most Similar to the word “**Immense**” in the passage.

- (a) Teeny                      (b) Finite  
(c) Insignificant                      (d) Humongous

(35) Choose the word which is Most Opposite to the word “**Archived**” in the passage.

- (a) Chronicles                      (b) Scrolls  
(c) Extracts                      (d) None of the above

(36) Choose the word similar in meaning to “**DEFER**”

- a) Indifferent                      b) Defy  
c) Differ                      d) Postpone

(37) Choose the word opposite to the meaning of the word “**INSTANTIATED**”

- a) Materialized                      b) Disembodied  
c) Incarnated                      d) Expressed

(38) This refers to the grammatical aspects of writing and is focused on the degree to which sentences are connected so that the flow of idea is easy to understand:

- a) Organization    b) Coherence  
c) Cohesion    d) Writing Conventions

(39) Usage in “**you have hissed the mystery lectures**” is an example of:

- a) Error of lexical choice    b) Spoonerism  
c) Aphorism    d) Inadvertent mistake

(40) **Choose the correct option to fill in the blank:**

By this time tomorrow, the astronaut’s \_\_\_\_\_ through space for nineteen hours.

- a) Is going to fly                      b) Will be flying  
c) will fly                      d) Will have been flying

(41) Choose the word similar in meaning to **LACONICALLY**

- a) Pleonastic                      b) Circumlocutory
- c) Succinct                        d) windy

(42) Choose the correct options: There were \_\_\_\_\_ vegetables in the refrigerator so he went to look for \_\_\_\_\_ grocery since we needed \_\_\_\_\_ of them.

- a) Some, other, some
- b) A lot of, a, lots
- c) Hardly any, another, plenty
- d) Fewer, any, more

(43) Which of the following words mean the same as the word "**CONTRIVED**":

- a) Dictates                        b) Controls
- c) Manages                        d) Presents

(44) The word **Pyrotechnics** means

- a) The study of hybridity of fruits and vegetables
- b) The study of extracting silk from silkworm
- c) The study of cryptocurrency
- d) The study of making fireworks

(45) Find the correctly spelled word:

- a) MERCENARY    b) MERSENARY
- c) MARCENARY    d) MARCENERY

(46) To decide a political question by the direct vote of the whole electorate:

- a) ABDICATE    b) REFERENDUM
- c) DESPOTISM    d) THEOCRACY

(47) Choose the appropriate antonym of the following: **NESCIENCE**

- a) Ignorance                      b) Beauty
- c) Comprehension                d) Truth

(48) Fill in the blank with the appropriate preposition from the following:

Thousands of young patriotic Indians responded to Vivekananda's clarion call and jumped wholeheartedly \_\_\_\_\_ the freedom struggle.

- a) To                      b) In                      c) Into                      d) for

(49) **Change into Passive Voice:**

Everyone understands English.  
English \_\_\_\_\_ by everyone.

- a) Is understood    b) Has been understood
- c) Was understood    d) Has understood

(50) **Fill in the blank with appropriate tense:**

People \_\_\_\_\_ them out in the recent elections.

- a) Voted                              b) Were voting
- c) have voted                        d) votes



# DOMAIN

51. Human Resource Management is the process of
- Recruitment and selection
  - Analyzing the skills
  - Workforce utilization
  - None of the Above
52. You must treat your employees with respect and dignity – Quoted by
- Dhirubai Ambani
  - Bill Gates
  - Warron Buffet
  - Narayana Moorthy
53. HR management on procurement, development and cooperation targets
- To accomplish social objectives
  - To obtain organizational objectives
  - Both A and B
  - Neither A nor B
54. When industrial development increased by HR, it also stimulates
- Organizational modifications
  - Economy
  - Technology
  - Socio cultural change
55. \_\_\_\_\_ is the art and science
- Labour legislation
  - Union management relationship
  - Allotment of right job to right one
  - All of the above
56. What does investment stand for?
- approximate increase in the national stocks
  - the application of funds for the products and services employed for the production process
  - use of funds for the assets with the purpose to earn returns
  - applying money to buy a flat or a house
57. The finance manager's role is to:
- ensures that the funds are properly utilized
  - maintains the financial health
  - effective supervision of capital
  - obtains capital assets of the organization
58. Among the following options which one is not included in money market security?
- Treasury bills
  - Certificate deposit
  - Commercial paper
  - National savings certificate
59. Traditional approach confines finance function only to \_\_\_\_\_
- Raising
  - utilizing
  - mobilizing
  - financing
60. Beta measures the \_\_\_\_\_.
- Financial risk.
  - Investment risk rate.
  - Market risk.
  - Market and finance risk.
61. An employer should only retrench employees who have been most recently hired. Which Section of the Industrial Disputes Act 1947 is referred to this statement?
- 34-F
  - 25-G
  - 30-F
  - 24-G
62. Which of the following factor does not involve in communication with employees?
- Compensating
  - Disciplining
  - Counselling
  - Interview

63. Who set the Performance development plan for the employees?
- Department Head
  - Employee
  - Immediate boss
  - Any of the above
64. The actual performance with set standards is involved in Comparison of employees.
- Leading
  - Staffing
  - Controlling
  - Organizing
65. The following type of recruitment process is said to be a costly affair.
- External recruitment
  - Internal recruitment
  - Cost remains the same for both types
  - None of the above
66. Creation of a political fund by trade unions under the Trade Union Act is
- Compulsory
  - Optional
  - by donation from political parties
  - No such provision in the Act
67. What will be the minimum number of workers required for organizing a trade union for registration according to the latest amendment under the Trade Unions' Act, 1926?
- 7 workers
  - 10 %
  - 100 worker
  - 10% or 100 or 7
68. Which of the following is not included under the definition of wages given under the Payment of Wages Act, 1936?
- Basic Wage
  - Dearness Allowance
  - Incentive
  - Gratuity
69. If deduction is made contrary to the provisions of the Payment of Wages Act, 1936 the aggrieved employee can write to the inspector appointed under the Act within the time period given below from the date on which the deduction from wages was made or the date on which the payment of wages is due
- two years
  - one year
  - twelve weeks
  - six weeks
70. Under the Payment of Wages Act, 1936 the maximum limit on deductions should not ordinarily cross
- 50 percent generally and 65 percent in case of payments due to the cooperatives
  - 60 percent generally and 75 percent in case of payments due to the cooperatives
  - 50 percent generally and 75 percent in case of payments due to the cooperatives
  - 40 percent generally and 75 percent in case of payments due to the cooperatives
71. The typical method of retail operation used by supermarkets and catalog showrooms is called:
- Self-service retailing.
  - Limited-service retailing.
  - Full-service retailing.
  - Service merchandiser.
72. Which concept holds that consumers will not buy enough of organizations product unless it takes large scale selling and promotion effort?
- Marketing
  - Selling.
  - Production.

- d) Product.
73. \_\_\_\_\_ includes that other company is offering similar products & services to the same customer at similar prices.
- a) Supply Chain.
  - b) Competition.
  - c) Product.
  - d) Price
74. \_\_\_\_\_ consists of a group of customers who share a similar set of wants
- a) Micro Marketing
  - b) Mass Marketing.
  - c) Market Segment.
  - d) Market targeting.
75. The starting point for discussing segmentation is \_\_\_\_\_.
- a) Segregation.
  - b) Positioning.
  - c) Both.
  - d) None