

1F04116Z0

Program Name: BCA (CET Code-114)

Test Booklet Serial Number: 3008121

Test Booklet Series: A

Time allowed: 2 hour 30 minute

This booklet contains 24 Pages

Do not open this test booklet until you are asked to do so by the Invigilator.

Read carefully the Instructions given below and on the Back Cover of this Test Booklet.

1. The language of the question paper is English only.
2. Immediately after opening this Test Booklet, please check that it contains the number of pages as printed above. (In case there is any omission, please get the Test Booklet replaced by the Invigilator).
3. Before attempting the questions, candidate must read the General Instructions given inside regarding number of questions and marking scheme etc.
4. Use Black/Blue ball point pen only for writing your particulars on OMR Answer Sheet at the space provided.
5. Use Black/Blue ball point pen only for marking responses to the questions on the circles provided for answering questions on the OMR Answer Sheet.
6. Rough work is to be done on the space provided for this purpose in this Test Booklet only.
7. The candidate must hand over the OMR Answer Sheet and Test Booklet to the invigilator after the completion of examination.
8. The Test Booklet Series is mentioned above. Please do not forget to write this Series on the OMR Answer Sheet. If the Series is not written, the Answer Sheet will not be evaluated.
9. The candidate should ensure that the OMR Answer Sheet is not folded/damaged. He/She should not make any stray marks on it, otherwise it will not be evaluated.
10. The candidates should fill up their Roll Number and other details correctly. Please check that the roll number written in numerical tally with that marked in circles provided on the OMR Answer Sheet. Any discrepancy may lead to cancellation of Answer Sheet and no claim of the candidate whatsoever will be entertained.
11. Multiple markings will be treated as wrong response i.e. negative marks will be given.
12. For other instructions please see the last page of this Test Booklet.

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Name of the candidate (in capital letters) .....

Roll No. (in figures) 

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OMR Answer Sheet No. 

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Signature of the candidate

Signature of the invigilator



## **General Instructions for the candidate**

1. This test booklet contains 100 multiple choice questions. Each question has 4 alternative choices marked as a, b, c and d. The candidate must choose the most appropriate out of the four alternatives. The candidate must attempt all questions.
2. For each correct answer, four marks will be awarded and one mark will be deducted for each incorrect answer. Zero marks will be awarded for unanswered question.
3. The duration of test is two and half hour (150 minutes) and carry 400 marks.

- Q1 Which of the following words is an opposite in meaning to the word PEEVED?
- a. Gripe
  - b. Vexed
  - c. Delighted
  - d. Miffed
- Q2 He splayed his hands over the table. What is the meaning of the underlined word?
- a. move negligently
  - b. move gently
  - c. tapped
  - d. spread
- Q3 The boat was overloaded (A)/ with the passengers (B)/ and as a result it got drowned.(C)/ No error (D)
- Which part of the sentence above has an error, if any?
- a. A
  - b. B
  - c. C
  - d. D
- Q4 His eyebrows \_\_\_\_\_ when he bent over the flames.
- Fill in the blank choosing an appropriate word from the following words.
- a. singed
  - b. deformed
  - c. deranged
  - d. disgorged
- Q5 He is considered as a cog in the wheel.
- What does the above sentence imply?
- a. He is an obstructionist
  - b. He is a very special person
  - c. He is the driving force
  - d. He is as important as any other person

- Q6 Which of the following words is a synonym of the word CAREEN?
- a. Wobble
  - b. Cave in
  - c. Caring
  - d. Capture
- Q7 What is the meaning of the idiom 'to haul over the coals'?
- a. To walk on burning coals
  - b. To move around coal mines
  - c. To rebuke someone very strongly
  - d. To over haul the machines
- Q8 The study of beards is known as \_\_\_\_\_
- a. Trichology
  - b. Saloononics
  - c. Cosmetology
  - d. Pogonology
- Q9 Mr Rao has been (A)/ relieved from his duties (B)/ and is expected to be here by tomorrow. (C)/ No error (D)
- Which part of the sentence above has an error, if any?
- a. A
  - b. B
  - c. C
  - d. D
- Q10 FISH is to SCHOOL as \_\_\_\_\_.
- a. wolf is to pack
  - b. tiger is to jungle
  - c. herd is to peacock
  - d. raven is to school
- Q11 An adult male sheep is called \_\_\_\_\_
- a. a lamb
  - b. a ram
  - c. he sheep
  - d. an ewe

Q12-Q15: Read the passage given below and answer questions Q12-Q15

Typically, people think of genius, whether it manifests in Mozart's composition of symphonies at age five or Einstein's discovery of relativity, as having a quality not just of the supernatural, but also of the eccentric. People see genius as a good abnormality; moreover, they think of genius as a completely unpredictable abnormality. Until recently, psychologists regarded the quirks of genius as too erratic to describe intelligibly; however, Anna Findley's ground breaking study uncovers predictable patterns in the biographies of geniuses. These patterns do not dispel the common belief that there is a kind of supernatural intervention in the lives of unusually talented men and women, however, even though they occur with regularity. \_\_\_\_\_, Findley shows that all geniuses experience three intensely productive periods in their lives, one of which always occurs shortly before their deaths; this is true whether the genius lives to 19 or 90.

- Q12 Which word or phrase, if inserted into the blank space of the passage, best defines the relationship of the last sentence in the passage to the one preceding it?
- a. For example
  - b. Despite this
  - c. However
  - d. In other words
- Q13 According to the information presented in the passage, what is the general populace's opinion of genius?
- a. It is predictable and uncommon.
  - b. It is supercilious and abnormal.
  - c. It is unpredictable and erratic.
  - d. It is extraordinary and erratic.
- Q14 Which of the following would be the best title for this passage?
- a. Understanding Mozarts and Einsteins
  - b. Predicting the Life of a Genius
  - c. The Uncanny Patterns in the Lives of Geniuses
  - d. Pattern and Disorder in the Lives of Geniuses

Q15 Given the information in the passage, which of the following statements is true?

- a. Anna Findley is a biographer.
- b. All geniuses are eccentric and unpredictable.
- c. Geniuses have three prolific times in their lives.
- d. Mozart discovered relativity.

Q16 In what ratio the segment joining  $(-1, -12)$  and  $(3, 4)$  divided by x-axis?

- a. 1:3
- b. 2:1
- c. 3:1
- d. 5:1

Q17 If y intercept of a plane  $(x-y+z-1) + q(x+y-z-1) = 0$  is 3 then q is :

- a. 2
- b. 1
- c.  $1/2$
- d. None of the above

Q18 Find the equation of circle with center at  $(2, 5)$  and radius 5 units.

- a.  $x^2 + y^2 + 4x - 10y + 4 = 0$
- b.  $x^2 + y^2 - 4x - 10y + 4 = 0$
- c.  $x^2 + y^2 + 4x + 10y + 4 = 0$
- d.  $x^2 + y^2 + 4x - 10y - 4 = 0$

Q19 The eccentricity of  $(x/25)^2 + (y/16)^2 = 1$  is:

- a.  $3/4$
- b. 1
- c.  $3/5$
- d. None of these

Q20 The number of permutations of word *DEPENDENT* is:

- a. 15120
- b. 15125
- c. 16632
- d. None of the above

- Q21 In how many ways we can select a group of 2 males and 2 females from the family of 5 males and 3 females?
- 3
  - 30
  - 20
  - None of the above
- Q22 The integrating factor of the differential equation  $x^2 \left( \frac{dy}{dx} \right) - xy = 1$  is:
- $1/x$
  - $\frac{x}{1+x^2}$
  - $\sqrt{1-x^2}$
  - None of these
- Q23 If,  $4\cot^2 x - 16\cot x + 15 < 0$  and  $x$  is real then  $\cot x$  lies in the interval:
- $(0, -\frac{1}{2})$
  - $(\frac{3}{2}, \frac{5}{2})$
  - $(-1, \frac{5}{2})$
  - None of the above
- Q24 If  $\vec{A}, \vec{B}$  are unit vectors. If  $\vec{C} = \vec{A} + 2\vec{B}$  and  $\vec{D} = 5\vec{A} - 4\vec{B}$  are perpendicular, then angle between  $\vec{A}$  and  $\vec{B}$  is:
- $\pi/2$
  - $\pi/3$
  - $\frac{\pi}{4}$
  - None of the above
- Q25 If  $\vec{a} = (1, 1, 1)$ ,  $\vec{b} = (x, y, z)$ ,  $\vec{c} = (0, 1, -1)$  are three vectors such that  $\vec{a} \cdot \vec{b} = 3$ ,  $\vec{a} \times \vec{b} = \vec{c}$ , then  $\vec{b}$  is
- $(2/3, 1/3, 2/3)$
  - $(1/3, 2/3, 1)$
  - $(2/3, 2/3, 5/3)$
  - $(5/3, 2/3, 2/3)$



- Q26 If  $a, b, c$  are nonzero vectors such that  $a=8b$ , and  $c=-7b$ , then the angle between  $a$  and  $c$  is:
- $\pi$
  - $\pi/2$
  - $\pi/3$
  - None of the above
- Q27 In arithmetic progression 171, 162, 153....., the first negative term is:
- 9
  - 2
  - 6
  - None of these
- Q28 The solution of the equation  $|z| = z + 1 + 2i$  is:
- $\frac{3}{2} - 2i$
  - $3 - i$
  - $3+2i$
  - none of these
- Q29 The area of the figure bounded by the curve  $y = \log_e x$ , the  $x$  - axis and the straight-line  $x = e$
- $5 - e$
  - $3 + e$
  - 1
  - None of the above
- Q30 For what value of  $\alpha$ , the matrix  $A$  is a singular matrix if  $A = \begin{bmatrix} 1 & 3 & \alpha + 2 \\ 2 & 4 & 8 \\ 3 & 5 & 10 \end{bmatrix}$ ?
- 2
  - 3
  - 4
  - 8
- Q31 If  $A$  is a  $3 \times 3$  matrix,  $|A| \neq 0$  and  $|3A| = k|A|$ , then the values of  $k$  is:
- 3
  - 9
  - 8
  - 27

Q32 The pair of equations  $x + 3y = 6$  and  $2x - 3y = 12$  :

- a. is consistent
- b. is not consistent
- c. has a unique solution
- d. does not have an infinite solution

Q33 Which of the following statements is false?

- a. If  $|A| = 0$ , then  $|\text{adj } A| = 0$
- b. Adjoint of a diagonal matrix of order  $3 \times 3$  is a diagonal matrix
- c. The product of two upper triangular matrices is an upper triangular matrix
- d.  $\text{adj}(AB) = \text{adj}(A) \text{adj}(B)$

Q34 The variance of the following grouped data is:

<b>Class Interval</b>	4-8	8-12	12-16	16-20
<b>Frequency</b>	3	6	4	7

- a. 20
- b. 10
- c. 19
- d. 35

Q35 The coefficient of variation of the two frequency distributions is 60% and 40% respectively. Both series have the same mean = 15. What is their standard deviation?

- a.  $\sigma_1 = 2$  and  $\sigma_2 = 3$
- b.  $\sigma_1 = 9$  and  $\sigma_2 = 6$
- c.  $\sigma_1 = 3$  and  $\sigma_2 = 7$
- d.  $\sigma_1 = 16$  and  $\sigma_2 = 6$

Q36 If A, B, and C are any three arbitrary events such that  $P(A)=P(B)=P(C)=1/4$ ,  $P(A \cap B) = P(B \cap C) = 0$ , and  $P(C \cap A) = 1/8$ . Find the probability that at least one of the events A, B, and C occur.

- a.  $1/8$
- b.  $3/8$
- c.  $5/8$
- d.  $7/8$

- Q37 A bag contains 5 balls and it is not known how many of them are white. 2 balls are drawn at random from the bag and they are noted to be white. What is the chance that all the balls in the bag are white?
- a.  $1/2$
  - b.  $1/3$
  - c.  $1/4$
  - d.  $1/5$
- Q38 If  $\sin y = x \sin(a + y)$ . Then  $\frac{dy}{dx}$  is:
- a.  $\frac{\sin(a+y)}{\sin a}$
  - b.  $\frac{\sin^2(a+y)}{\sin a}$
  - c.  $\frac{\cos^2(a+y)}{\cos a}$
  - d.  $\frac{\cos(a+y)}{\cos a}$
- Q39 A point on the curve  $y = x^3 - 3x$ , where the tangent is parallel to the chord joining  $(1, -2)$  and  $(2, 2)$  is:
- a.  $(1, -1)$
  - b.  $(1, -1.53)$
  - c.  $(1.53, -1)$
  - d.  $(1.53, -1.53)$
- Q40 If  $A$  is the set of even natural numbers less than 8 and  $B$  is the set of prime numbers less than 7, then the number of relations from  $A$  to  $B$  is:
- a.  $2^9$
  - b.  $9^2$
  - c.  $3^2$
  - d.  $2^9 - 1$
- Q41 The number of four-digit numbers that can be formed from the digits 0, 1, 2, 3, 4, 5 with at least one digit repeated is:
- a. 420
  - b. 560
  - c. 780
  - d. none of the above

- Q42 If  $\int \sec^2(7 - 4x)dx = a \tan(7 - 4x) + C$ , then the value of  $a$  is
- 4
  - 0.25
  - 3
  - 7
- Q43 The value of  $x$ , if  $\begin{vmatrix} 2 & 4 \\ 5 & 1 \end{vmatrix} = \begin{vmatrix} 2x & 4 \\ 6 & x \end{vmatrix}$ , is:
- $\pm\sqrt{2}$
  - $\pm\sqrt{3}$
  - $\pm\sqrt{5}$
  - $\pm\sqrt{7}$
- Q44 If  $a, b, c$  are nonzero vectors such that  $a=8b$ , and  $c=-7b$ , then the angle between  $a$  and  $c$  is:
- $\pi$
  - $\pi/2$
  - $\pi/3$
  - None of the above
- Q45 If  $x^2 + ax + b = 0$  and  $x^2 + bx + a = 0$  have exactly one common root then the value of  $(a + b)$  is:
- 1
  - 0
  - 1
  - 3
- Q46 The two kinds of main memory are:
- ROM and RAM
  - primary and secondary
  - floppy disk and hard disk
  - direct and sequential
- Q47 In computer terminology, what is the full form of RAM?
- Random Access Memory
  - Repeated Access Memory
  - Rapid Access Memory
  - Regular Access Memory

- Q48 Permanent instructions that the computer use when it is turned ON and that cannot be changed by other instructions are contained in:
- ROM
  - RAM
  - ALU
  - SRAM
- Q49 What is the full form of PROM?
- Programmable Read Only Memory
  - Program Read Output Memory
  - Program Read Only Memory
  - Primary Read Only Memory
- Q50 Which of the following acts as a buffer between the CPU and the main memory?
- primary memory
  - cache memory
  - secondary memory
  - RAM
- Q51 The storage device used to compensate for the difference in rates of flow of data from one device to another is termed as:
- chip
  - channel
  - floppy
  - buffer
- Q52 Which media has the ability to have data/information stored (written) on them by users more than once?
- CD-R discs
  - CD-RW discs
  - Zip discs
  - Optical discs
- Q53 The term Bit is short for:
- megabyte
  - binary language
  - binary digit
  - binary number

- Q54 Kilo Byte equals to how many bytes?
- a. 1000
  - b. 1035
  - c. 1008
  - d. 1024
- Q55 How many kilobytes make a megabyte?
- a. 128
  - b. 1024
  - c. 256
  - d. 512
- Q56 The term 'gigabyte' refers to:
- a. 1024 byte
  - b. 1024 kilobyte
  - c. 1024 megabyte
  - d. 1024 gigabyte
- Q57 Which of the following is an octal number equal to decimal number  $(896)_{10}$ ?
- a. 0061
  - b. 6001
  - c. 1006
  - d. 1600
- Q58 The most widely used code that represents each character as a unique 8-bit code is:
- a. ASCII
  - b. UNICODE
  - c. BCD
  - d. All of the above
- Q59 Two inputs A and B of NAND gate have 0 output, if:
- a. A is 0
  - b. B is 0
  - c. Both are zero
  - d. Both are 1

- Q60 Which of following are known as universal gates?
- NAND and NOR
  - AND and OR
  - XOR and OR
  - AND
- Q61 If  $\Delta$  represents '1' and o represents '0'. What will be the one's complement of o $\Delta$  $\Delta$ oo $\Delta$ ?
- 011001
  - 100110
  - 101010
  - 000000
- Q62 A collection of various programs that helps to control your computer is called:
- system software
  - application software
  - Microsoft Excel
  - Microsoft Word
- Q63 Operating system is a:
- application software
  - system software
  - hardware
  - language
- Q64 A kind of system software, which is responsible for loading and relocating of the executable program in the main memory is:
- loader
  - linker
  - translator
  - presentation software
- Q65 Application software:
- is used to control the operating system
  - is designed to help programmers
  - performs specific task for computer users
  - is used for making design only

- Q66 Which among the following is not an example of system software?
- a. Operating System
  - b. Debugger
  - c. Software Driver
  - d. Adobe Photoshop
- Q67 Example(s) of open-source software is/are:
- a. Linux
  - b. Unix
  - c. MySQL
  - d. All of these
- Q68 Which of the following is the correct reason to use an operating system?
- a. To manage resources
  - b. To control the hardware
  - c. To provide an interface between the hardware and user
  - d. All of the above
- Q69 Which of the following is an operating system?
- a. Linux
  - b. Debugger
  - c. Mozilla
  - d. Google Chrome
- Q70 Which one of the following is not an operating system?
- a. Linux
  - b. Unix
  - c. Intel
  - d. Windows
- Q71 Which among the following is not a mobile operating system?
- a. Android
  - b. Safari
  - c. Symbian
  - d. iOS



Q72 Python is a:

- a. low level language
- b. high level language
- c. machine language
- d. assembly language

Q73 The central processing unit consist of:

- a. The arithmetic logic unit
- b. The registers
- c. The control unit
- d. All of the above

Q74 The computer keyboard in English normally uses:

- a. Abcdef base
- b. QWERT base
- c. Asdfg base
- d. None of the above

Q75 Alta Vista is a:

- a. Virus
- b. Vista theme
- c. Windows OS
- d. Search Engine

Q76 The forces acting at a point are called as:

- a. Collinear forces
- b. Coplanar forces
- c. Concurrent forces
- d. Unit forces

Q77 What is the distance between the focus and the pole of the minor us known as?

- a. Centre of Curvature
- b. Focal length
- c. Mirror number
- d. Radius of curvature

- Q78 What can be the maximum number of electrons in a shell, if principal quantum number is  $n$ ?
- $n$
  - $n^2$
  - $2n^2$
  - $3n^3$
- Q79 What will be the number of neutrons in an atom having atomic number 35 and mass number 80?
- 35
  - 45
  - 55
  - 80
- Q80 Who can be associated with the theory of evolution?
- Charles Darwin
  - Mendel
  - Stanley Miller
  - Harold Urey
- Q81 Which of the following hormones is known to be helpful in coping with stress?
- Serotonin
  - Calcitonin
  - Melatonin
  - Testosterone
- Q82 Washing soda is used:
- for removing permanent hardness of water
  - for disinfecting drinking water
  - as a cleaning agent for domestic purpose
- Which of the above is/are correct?
- Only 1 and 2
  - Only 1 and 3
  - Only 2 and 3
  - All of the above

- Q83 The apparent weight of a man in a lift is less than the real weight when :  
a. the lift is going up with an acceleration  
b. the lift is going down with uniform speed  
c. the lift is going up with uniform speed  
d. the lift is going down with an acceleration
- Q84 What is the unit of momentum?  
a. newton second  
b. joule second  
c. erg second  
d. pascal second
- Q85 Which of these indicates the splitting of different colours of light in a prism?  
a. Reflection of light  
b. Dispersion of light  
c. Diffraction of light  
d. Refraction of light
- Q86 Which among the following plays a role in production of alcohol in beer?  
a. Bacteria  
b. Protozoan  
c. Virus  
d. Yeast
- Q87 What is the name of eye drops designed to improve age related near-vision problems that is recently approved by US Food and Drug Administration?  
a. Vuity  
b. Vision  
c. Corneas  
d. Eye power
- Q88 Scientists working at which one of the following research organizations have discovered 'God's particle'?  
a. NASA  
b. CERN  
c. ISRO  
d. CNES

- Q89 The additional 8% human genome sequenced account for \_\_\_\_\_ million new letters added to the existing sequenced DNA.
- 40
  - 200
  - 280
  - 400
- Q90 Bacteria was first observed in the year \_\_\_\_\_.
- 1892
  - 1754
  - 1676
  - 1588
- Q91 Virus contains \_\_\_\_\_ number of ribosomes
- 18
  - 22
  - 10
  - None of the above
- Q92 Which of the following statements are true or false?
- Endemic when it spreads across the globe is called a pandemic.
  - Epidemic is a disease that is permanently present in a region or population
- Both I & II are true
  - Both I & II are false
  - I is true but II is false
  - I is false but II is true
- Q93 Which taste zone of the human tongue is a sour taste zone?
- Front
  - Front sides
  - Back
  - Back sides
- Q94 Block Chain Technology has the following hall mark feature/s:
- Reliability and consistency
  - Flexibility and reliability
  - Traceability and reliability
  - Traceability but not reliability

- Q95 Which one among the following is not a characteristic of 'big data'?
- Value
  - Veracity
  - Consistency
  - velocity
- Q96 Which of the following is/are feature/s of web 1.0?
- Interactive
  - Shareable
  - Both a & b
  - Neither a nor b
- Q97 5G wireless technology is estimated to be \_\_\_\_\_ times faster than 4G technology.
- 2
  - 5
  - 10
  - 20
- Q98 Washing soda is the common name for;
- Sodium carbonate
  - Sodium bicarbonate
  - Calcium carbonate
  - Calcium bicarbonate
- Q99 Air is a/an:
- Compound
  - Element
  - Electrolyte
  - None of the above
- Q100 What is the wave length of visible spectrum?
- 8500 – 9800 angstrom
  - 7800 – 8000 angstrom
  - 3900 – 7600 angstrom
  - 1300 – 3000 angstrom

**Rough Work**

## **Rough Work**

**READ THE FOLLOWING INSTRUCTIONS CAREFULLY:**

1. Candidates should open this test booklet only after the announcement to this effect made by the Invigilator.
2. The candidate should fill in his/her required particulars on the Test Booklet and OMR Answer Sheet at the space provided with blue/black Ball Point Pen.
3. For answering the questions and marking on circles prescribed for answering questions on the OMR Answer Sheet, only Black/Blue ball point pen should be used.
4. The candidates should not write their Roll Number anywhere else except in the specified space on the Test Booklet/OMR Answer Sheet.
5. Handle the Test Booklet and OMR Answer Sheet with care, as under no circumstances, another set will be provided.
6. The candidates should not do any rough work on the OMR Answer Sheet.
7. All calculations/writing work should be done on the space marked for Rough Work provided in the Test Booklet itself.
8. Each candidate must show on demand his/her Admission Ticket to the Invigilator, and or authorized representative of the University.
9. No candidates, without special permission of the Centre Superintendent or Invigilator, shall leave his/her seat, until the time prescribed for the test is over.
10. The candidates should not leave the hall without handing over the OMR Answer Sheet to the Invigilator on duty.
11. **Use of Electronic/Manual Calculator, Cellular Phones, Pagers etc., is prohibited.**
12. The candidates shall be governed by the Rules and Regulations of the University with regard to their conduct and discipline in the examination hall.
13. No part of the Test Booklet shall be detached or copied in any manner by the candidate under any circumstances.
14. The candidates will write the Correct Test Booklet Serial Number and Test Booklet Series, as given in the Test Booklet, in their OMR Answer Sheet as well as in the Attendance Sheet.
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