

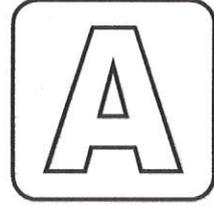
DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

Test Booklet No. :

Series

00225

**TEST BOOKLET**  
**QUESTIONED DOCUMENTS AND**  
**GENERAL STUDIES**



Time Allowed : 2 Hours

Full Marks : 200

*Read the following instructions carefully before you begin to answer the questions :*

1. The name of the Subject, Roll Number as mentioned in the Admission Certificate, Test Booklet No. and Series are to be written legibly and correctly in the space provided on the Answer-Sheet with Black/Blue ballpoint pen.
2. **Answer-Sheet without marking Series as mentioned above in the space provided for in the Answer-Sheet shall not be evaluated.**
3. All questions carry equal marks.

**The Answer-Sheet should be submitted to the Invigilator.**

*Directions for giving the answers :* Directions for answering questions have already been issued to the respective candidates in the 'Instructions for marking in the OMR Answer-Sheet' along with the Admit Card and Specimen Copy of the OMR Answer-Sheet.

*Example :*

Suppose the following question is asked :

The capital of Bangladesh is

- (A) Chennai  
(B) London  
(C) Dhaka  
(D) Dhubri

You will have four alternatives in the Answer-Sheet for your response corresponding to each question of the Test Booklet as below :



In the above illustration, if your chosen response is alternative (C), i.e., Dhaka, then the same should be marked on the Answer-Sheet by blackening the relevant circle with a Black/Blue ballpoint pen only as below :



**The example shown above is the only correct method of answering.**

4. Use of eraser, blade, chemical whitener fluid to rectify any response is prohibited.
5. Please ensure that the Test Booklet has the required number of pages (23) and 100 questions immediately after opening the Booklet. In case of any discrepancy, please report the same to the Invigilator.
6. No candidate shall be admitted to the Examination Hall/Room 20 minutes after the commencement of the examination.
7. No candidate shall leave the Examination Hall/Room without prior permission of the Supervisor/Invigilator. No candidate shall be permitted to hand over his/her Answer-Sheet and leave the Examination Hall/Room before expiry of the full time allotted for each paper.
8. No Mobile Phone, Electronic Communication Device, etc., are allowed to be carried inside the Examination Hall/Room by the candidates. Any Mobile Phone, Electronic Communication Device, etc., found in possession of the candidate inside the Examination Hall/Room, even if on off mode, shall be liable for confiscation.
9. No candidate shall have in his/her possession inside the Examination Hall/Room any book, notebook or loose paper, except his/her Admission Certificate and other connected papers permitted by the Commission.
10. Complete silence must be observed in the Examination Hall/Room. No candidate shall copy from the paper of any other candidate, or permit his/her own paper to be copied, or give, or attempt to give, or obtain, or attempt to obtain irregular assistance of any kind.
11. This Test Booklet can be carried with you after answering the questions in the prescribed Answer-Sheet.
12. Noncompliance with any of the above instructions will render a candidate liable to penalty as may be deemed fit.
13. No rough work is to be done on the OMR Answer-Sheet. You can do the rough work on the space provided in the Test Booklet.

**N.B. : There will be negative marking @ 0.25 per 1 (one) mark against each wrong answer.**

/56-A

[ No. of Questions : 100 ]

SEAL

1. Bloodstained cloth recovered at the crime site should be \_\_\_\_\_ before packing it for further examination.

- (A) collected as it is without drying
- (B) collected after drying in direct sunlight
- (C) collected after drying using the dryer
- (D) collected after drying in shade at room temperature

2. The unintentional repetition of letters or words in copying or printing is called

- (A) xerography
- (B) dittography
- (C) photocopy
- (D) hectography

3. The information required by the forensic expert working in FSL along with the exhibits submitted for examination in the concerned lab includes :

- I. Environment and place from where the sample is collected
- II. Name of the person who collected the sample
- III. How the sample was packed and transported

IV. Statement of victim and witnesses

V. How the sample was stored

- (A) I, II, III only
- (B) I, III, V only
- (C) II, IV only
- (D) I, IV, V only

4. The terminology 'character going off its feet' is observed in

- (A) inkjet printing
- (B) screen printing
- (C) typewriting
- (D) letterpress printing

5. Which among the following is **not** used as contrast filter in black and white photography?

- (A) Red
- (B) Green
- (C) Magenta
- (D) Orange

6. The strokes that are used to join two or more graphemes together in the handwriting are called

- (A) ligatures
- (B) garlands
- (C) feathers
- (D) hooks

7. Who was considered the fictional father of the science of Criminalistics?

- (A) Agatha Christie
- (B) Cesare Lombroso
- (C) Arthur Conan Doyle
- (D) Henry Andrews

8. The camera lens with a higher f-number will have

- (A) larger relative aperture
- (B) greater depth of field
- (C) more light entering the system
- (D) lesser field of view

9. Which among the following is depicted by master pattern of handwriting?

- (A) Range of natural variations in handwriting
- (B) Tremors in handwriting
- (C) Closeness to the copybook form of writing
- (D) Retouching of strokes in handwriting

10. Document written and signed by the same person is called

- (A) contested document
- (B) contemporary document
- (C) calligraphic document
- (D) holographic document

11. Match List—I with List—II and select the correct answer using the codes given below the lists :

*List—I*

*List—II*

- |                          |                            |
|--------------------------|----------------------------|
| a. Microprinting         | 1. Passport                |
| b. Watermarks            | 2. Stereomicroscope        |
| c. Hologram              | 3. 3-D laser-printed image |
| d. 88 optical characters | 4. Dandy Roll              |

*Codes :*

- |     |   |   |   |   |
|-----|---|---|---|---|
| (A) | a | b | c | d |
|     | 2 | 3 | 4 | 1 |
| (B) | a | b | c | d |
|     | 1 | 4 | 3 | 2 |
| (C) | a | b | c | d |
|     | 2 | 4 | 3 | 1 |
| (D) | a | b | c | d |
|     | 3 | 2 | 4 | 1 |

12. Assertion (A) : Videography of the crime site plays an important role in the analysis of crime scene evidence.  
Reason (R) : What a human eye cannot see, can be recorded by the camera.
- (A) Both (A) and (R) are not correct  
(B) Both (A) and (R) are correct  
(C) (A) is correct, but (R) is not correct  
(D) (A) is not correct, but (R) is correct
13. The shading effect is observed in which type of writing instrument?
- (A) Ballpoint pen  
(B) Sketch pen  
(C) Pencil  
(D) Fountain pen
14. Which among the following is an example of sympathetic ink?
- (A) Victoria blue  
(B) Cobalt chloride  
(C) Iron sulfate  
(D) Phthalocyanine blue
15. 'Squashing effect' is commonly observed in
- (A) gravure printing  
(B) embossed printing  
(C) relief printing  
(D) engraved printing
16. The phenomena of observing asymmetrical peaks due to the overloading of the column in chromatographic separations is known as
- (A) fronting  
(B) tailing  
(C) capping  
(D) aliasing
17. An analyte eluted from the chromatographic column as a Gaussian peak with a retention time of 7 min 45 s and a base peak width of 30 s. What will be the number of theoretical plates in the column?
- (A) 3488  
(B) 8433  
(C) 8343  
(D) 3844

18. Consider the following statements :

A digital signature

- I. is an electronic record to the certifying authority issuing such signatures.
- II. serves as an identity of the individual to access the information on the Internet.
- III. is the method to ensure that the content of the digital document is unchanged.

Which of the statements mentioned above is/are correct?

- (A) I and II
- (B) II and III
- (C) III only
- (D) II only

19. A \_\_\_\_\_, also known as a data authentication code (DAC), is a one-way hash function with the addition of a secret key.

- (A) message authentication code
- (B) message authorization code
- (C) message automatic code
- (D) message access code

20. CEDAR stands for

- (A) Centre of Examination for Document Analysis and Recognition
- (B) Centre of Excellence for Document Analysis and Recognition
- (C) Centre of Examination for Document Analyst and Recognizer
- (D) Centre of Experts for Document Analysis and Recognition

21. The difference between the expected value of a statistic and the value of the parameter being estimated is called a

- (A) bias
- (B) sampling error
- (C) standard deviation
- (D) standard error

22. The wavelengths of visible light, X-rays and microwaves are represented by  $\lambda_v$ ,  $\lambda_x$  and  $\lambda_m$  respectively, then

(A)  $\lambda_v > \lambda_x > \lambda_m$

(B)  $\lambda_m > \lambda_v > \lambda_x$

(C)  $\lambda_m > \lambda_x > \lambda_v$

(D)  $\lambda_v > \lambda_m > \lambda_x$

23. Which among the following is the important characteristic determining the skill of the writer?

(A) Proficiency in imitating the writing

(B) Size of the characters

(C) Embellishment

(D) Simplification

24. The ideal packaging material for collection and preservation of mobile phone containing digital document as an evidence is

(A) molded fiber

(B) paper bag

(C) plastic container

(D) Faraday bag

25. Assertion (A) : The handwriting of an individual remains unaffected with advancing age.

Reason (R) : Each mature writer has a handwriting individual to him or her.

(A) (A) is correct, but (R) is not correct

(B) (A) is not correct, but (R) is correct

(C) Both (A) and (R) are correct

(D) Both (A) and (R) are not correct

26. The opinion of certifying authority of a digital signature is accepted under Section \_\_\_\_ of the Indian Evidence Act, 1872.

(A) 45

(B) 45A

(C) 47A

(D) 46B

27. Which among the following is an obvious feature of traced signatures?

(A) Superimposing stroke

(B) Blunt start

(C) Tremor

(D) Poor line quality

28. The automated database system developed by German law enforcement for the collection, preservation and comparison of handwriting samples is called

- (A) DOG
- (B) FISH
- (C) CEDAR
- (D) DATE

29. Chemical etching for restoration of chemically erased writings uses

- I. sodium hydroxide
- II. ammonium nitrate
- III. thiocyanic acid
- IV. polyvinyl chloride

Choose the correct answer :

- (A) I, II and III
- (B) II and III
- (C) III only
- (D) IV only

30. The long range photographs collected from the crime scene should

- I. encompass the entire large scene and be overlapping
- II. represent a 360-degree perspective and include a landmark

III. include identifying marks, such as house number(s) or license plate(s)

IV. keep a scale beside every evidence

Choose the appropriate answer :

- (A) I, II, III and IV
- (B) II and III only
- (C) II and IV only
- (D) I, II and III only

31. The markers used to differentiate between the authentic and counterfeited inks are commonly known as

- (A) pigment
- (B) taggant
- (C) binder
- (D) fastener

32. Unlike normal digital signatures, a/an \_\_\_\_\_ signature cannot be verified without the signer's consent.

- (A) undeniable
- (B) normal
- (C) untouched
- (D) undetected

33. With reference to UV spectrophotometer, which are the correct advantages offered by the double beam system over single beam system?

- I. It is not necessary to continually replace the blank with the sample or to zero adjust at each wavelength.
- II. The ratio of the powers of the sample and reference beams is constantly obtained and used.
- III. Any error due to variation in the intensity of the source and fluctuation in the detector is maximized.
- IV. Rapid scanning over a wide wavelength region and to the use of a recorder or digital read out.

- (A) I, II, III and IV
- (B) II, III and IV only
- (C) I, II and III only
- (D) I, II and IV only

34. Match List—I with List—II and select the correct answer using the codes given below the lists :

<i>List—I</i>	<i>List—II</i>
a. Defect marked by irregular shaky strokes	1. Penmanship
b. Signatures created by imagination of the forger	2. Obliteration
c. Technique of writing with hand using writing instrument	3. Tremor
d. Hiding the character using opaque material	4. Spurious

Codes :

- |     |   |   |   |   |
|-----|---|---|---|---|
| (A) | a | b | c | d |
|     | 2 | 1 | 3 | 4 |
| (B) | a | b | c | d |
|     | 4 | 2 | 3 | 1 |
| (C) | a | b | c | d |
|     | 3 | 4 | 1 | 2 |
| (D) | a | b | c | d |
|     | 3 | 2 | 4 | 1 |

35. A fluorescent lamp consists of a glass tube filled with a mixture of which of the following?

- (A) Carbon and mercury
- (B) Mercury and hydrogen
- (C) Argon and mercury
- (D) Helium and hydrogen

36. Which among the following is the transitory defect in typeScript?

- (A) Fading of ink
- (B) Twisting of characters
- (C) Skipping of space between letters
- (D) Missing serifs

37. Fax machines print a header at the top of each fax page that may become a very important point of comparison. What is this header called?

- (A) Transmission time interval
- (B) Time transmission interval
- (C) Transmission time index
- (D) Time transmission index

38. The most suitable solvent system for thin layer chromatography of inks is
- (A) ethanol : acetone : acetic acid (4 : 1 : 5)
  - (B) amyl alcohol : acetic acid : chloroform (6 : 1 : 2)
  - (C) amyl alcohol : acetic acid : pyridine (6 : 1 : 2)
  - (D) *n*-butanol : pyridine : water (3 : 1 : 1.5)
39. The age of ink can be determined by
- (A) column diffusion
  - (B) sulfate diffusion
  - (C) chloride diffusion
  - (D) None of the above
40. Chiral stationary phase in gas chromatography is mainly used for the separation of which of the following compounds?
- (A) Geometric isomers
  - (B) Enantiomers
  - (C) Conformational isomers
  - (D) Structural isomers
41. On what principle does the Dot matrix printer work?
- (A) Piezoelectric effect
  - (B) Hooke's law
  - (C) Solenoid action
  - (D) Bernoulli's effect
42. The absorption of ink by blotting paper involves
- (A) capillary action phenomena
  - (B) viscosity of ink
  - (C) siphon action
  - (D) diffusion of ink
43. The first four digits of the credit card represent
- (A) Customer Verification Code (CVC)
  - (B) Customer Verification Value (CVV)
  - (C) Bank Verification Number (BVN)
  - (D) Bank Identification Number (BIN)
44. The error in the measurement of lifetime of an atom is  $2 \times 10^{-2}$  sec. What is the minimum uncertainty in its energy in eV?
- (A)  $2 \times 10^{-15}$
  - (B)  $1.6 \times 10^{-14}$
  - (C)  $4 \times 10^{-15}$
  - (D)  $2.5 \times 10^{-15}$

45. After India got Independence from the British rule, \_\_\_\_\_ was the first Indian to be appointed as the Government Examiner of Questioned Documents after almost two years of Independence in 1949.

- (A) Mr. B. N. Mullik
- (B) Mr. B. Lal
- (C) Mr. P. Thomas Rey
- (D) Mr. S. N. Sen

46. The technique used to determine the origin of the digital document is

- (A) ELA
- (B) hex value
- (C) PRNU
- (D) histogram analysis

47. As per the Indian Evidence Act, 1872, how old should the electronic record be to attract Section 90A?

- (A) Five years
- (B) Three years
- (C) Ten years
- (D) Seven years

48. Assertion (A) : 2%–3% of polyvinyl acetate is commonly used to stabilize charred document recovered at the crime site.

Reason (R) : Charred documents are usually fragile and hard to handle.

- (A) (A) is not correct, but (R) is correct
- (B) Both (A) and (R) are correct
- (C) (A) is correct, but (R) is not correct
- (D) Both (A) and (R) are not correct

49. Who first headed the institution of GEQD at Shimla from 1906?

- (A) V. O. J. Hodgson
- (B) R. Stott
- (C) C. R. Hardless
- (D) F. Brewster

50. A cylinder that serves as the backing of the paper and absorbs the blow from the typeface is known as

- (A) drum
- (B) typebar
- (C) container
- (D) platen

51. *Smritir Tirtha*, a biography, is based on the life of

- (A) Hemchandra Barua
- (B) Miles Bronson
- (C) Nathan Brown
- (D) Nabin Chandra Bordoloi

52. Which one of the following statements about the Quit India Movement is **not** correct?

- (A) It broke out in August 1942.
- (B) Ahmedabad Textile Mills went on strike for more than three months.
- (C) The Muslim League and the Hindu Mahasabha actively participated in the Movement.
- (D) Communist Party did not support the Movement.

53. The State of Assam possesses which type of climate?

- (A) Tropical climate
- (B) Hot climate
- (C) Warm climate
- (D) Cold climate

54. Who among the following was the social activist and pioneer of the Feminist Movement in Assam?

- (A) Chandraprabha Saikiani
- (B) Kanaklata Barua
- (C) Pushpalata Das
- (D) None of them

55. The journalist who refused to accept the Padma Bhushan was

- (A) Sekharan Nair
- (B) Khushwant Singh
- (C) Ratan Thiyam
- (D) Arun Shourie

56. India's Moon Mission the Chandrayaan-2 was launched on a

- (A) GSLV-MK III-M1
- (B) GSLV-MK III-M2
- (C) GSLV-MK IV-M1
- (D) GSLV-MK IV-M2

57. Which one of the following statements is **not** correct?

- (A) Hepatitis B virus is transmitted much like HIV.
- (B) Hepatitis B, unlike Hepatitis C, does not have a vaccine.
- (C) Some of those infected with Hepatitis B and C viruses do not show the symptoms for many years.
- (D) Globally the number of people infected with Hepatitis B and C viruses are several times more than those infected with HIV.

58. In India, 'Report on Currency and Finance' is an annual publication of the

- (A) SEBI
- (B) RBI
- (C) Finance Commission
- (D) Finance Ministry

59. A 'SWIFT Code' is related to

- (A) International Banking Transaction
- (B) Quick Toll Plaza Electronic Payment
- (C) Payment Gateway System
- (D) None of the above

60. Which of the following is geographically closest to the Great Nicobar?

- (A) Sumatra
- (B) Borneo
- (C) Java
- (D) Sri Lanka

61. Which one among the following is the correct order of Tiger Reserves situated from North to South in India?

- (A) Corbett, Simlipal, Sariska, Periyar
- (B) Periyar, Sariska, Simlipal, Corbett
- (C) Corbett, Sariska, Simlipal, Periyar
- (D) Periyar, Simlipal, Sariska, Corbett

62. The draft, Data Empowerment and Protection Architecture has been released by the

- (A) NITI Aayog
- (B) UIDAI
- (C) Ministry of Electronics and Information Technology
- (D) Digital Communications Commission

63. Which of the following is/are **not** in the objective of the NEP, 2020?

- I. To increase public investment on education up to 10% of GDP by 2030
- II. To increase gross enrolment ratio in higher education to 50%

III. To create provision of Academic Bank of Credit

Select the correct answer using the codes given below.

- (A) I only
- (B) II only
- (C) I and II
- (D) All of the above

64. The largest landlocked country in the world is

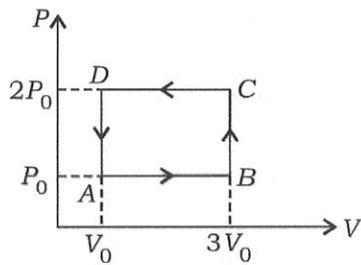
- (A) Republic of the Congo
- (B) Mongolia
- (C) Bolivia
- (D) Kazakhstan

65. Which of the following became the first State/UT in India to present an e-budget and stream it live on social media as well?

- (A) Andhra Pradesh
- (B) Kerala
- (C) Assam
- (D) Delhi

66. Which among the following types is a non-material pollution?
- (A) Air pollution
  - (B) Water pollution
  - (C) Thermal pollution
  - (D) Soil pollution
67. The Nobel Prize in Literature for the year 2023 was won by
- (A) Louise Glück
  - (B) Annie Ernaux
  - (C) Jon Fosse
  - (D) Abdulrazak Gurnah
68. Which of the following is **not** a dwarf planet?
- (A) Pluto
  - (B) Ceres
  - (C) Makemake
  - (D) Mimas
69. The Government of India on October 4, 2023 notified the constitution of the
- (A) National Turmeric Board
  - (B) National Tea Board
  - (C) National Coconut Board
  - (D) None of the above
70. The Khelo India Winter Games, 2024 was held in
- (A) Ladakh and Himachal Pradesh
  - (B) Jammu and Kashmir and Himachal Pradesh
  - (C) Ladakh and Jammu and Kashmir
  - (D) Himachal Pradesh and Uttarakhand

71. An ideal gas undergoes cyclic process ABCDA as shown in the  $P$ - $V$  diagram below :



The amount of work done by the gas is

- (A)  $6 P_0 V_0$   
 (B)  $-2 P_0 V_0$   
 (C)  $2 P_0 V_0$   
 (D)  $4 P_0 V_0$
72. Just as zeroth law of thermodynamics introduces the concept of temperature, the first law of thermodynamics introduces the concept of

- (A) heat  
 (B) entropy  
 (C) internal energy  
 (D) work done

73. What is the de Broglie wavelength of an electron with kinetic energy 120 eV?

- (A)  $1.12 \text{ \AA}$   
 (B)  $1.12 \text{ nm}$   
 (C)  $8.8 \text{ \AA}$   
 (D)  $8.8 \text{ nm}$

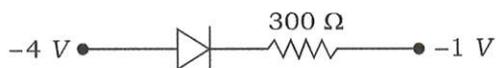
74. Which of the following statements is true?

- (A) Nuclear force is a long range force.  
 (B) Nuclear force is charge independent.  
 (C) Nuclear force is spin independent.  
 (D) None of the above

75. For an optical fibre, if  $\mu_1$  and  $\mu_2$  are the refractive indices of the core and the cladding respectively, then which of the following conditions must be fulfilled?

- (A)  $\mu_1 > \mu_2$   
 (B)  $\mu_1 < \mu_2$   
 (C)  $\mu_1 = \mu_2$   
 (D)  $\mu_1$  and  $\mu_2$  can have any value

76. What is the current in the circuit shown in the following figure?

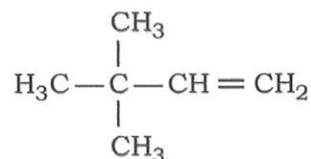


- (A)  $10^{-2}\text{ A}$
- (B)  $10^{-3}\text{ A}$
- (C)  $1\text{ A}$
- (D) Zero
77. Which one amongst the following is **not** an elasticity constant?
- (A) Poisson's ratio
- (B) Young's modulus
- (C) Modulus of rigidity
- (D) Bulk modulus
78. Once magnetized, the substances which at room temperature retain their ferromagnetic property for a long period are known as
- (A) paramagnetic substances
- (B) diamagnetic substances
- (C) permanent magnets
- (D) superconductors

79. The elements which differ in atomic number by 8 or 18, belong to the same \_\_\_\_\_ of the periodic table.

- (A) period
- (B) group
- (C) row
- (D) column

80. The IUPAC name of the compound



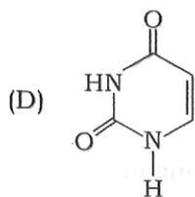
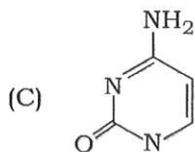
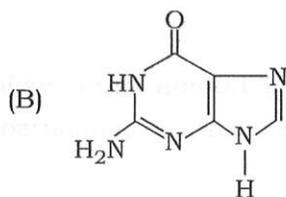
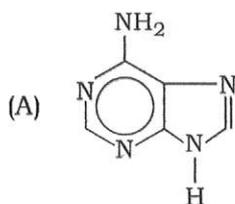
is

- (A) 3,3,3-trimethylprop-1-ene
- (B) 1,1,1-trimethylprop-2-ene
- (C) 3,3-dimethylbut-1-ene
- (D) 2,2-dimethylbut-3-ene
81. Rubber is an example of
- (A) natural polymer
- (B) synthetic polymer
- (C) semi-synthetic polymer
- (D) None of the above

82. If the enthalpy change for the reaction  $N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$  is  $-93.7 \text{ kJ}$ , then the reaction is

- (A) endothermic
- (B) exothermic
- (C) isothermal
- (D) reversible

83. Which of the following structures represents adenine (A), one substituted purines found in DNA?



84. The instantaneous rate of the following reaction (hypothetical reaction)



in terms of concentrations of A, B, C and D can be expressed as

(A)  $-\frac{d[A]}{dt}$

(B)  $-\frac{1}{2} \frac{d[C]}{dt}$

(C)  $-4 \frac{d[D]}{dt}$

(D)  $3 \frac{d[B]}{dt}$

85. Gymnosperms show

- (A) flowers
- (B) naked seeds
- (C) covered seeds
- (D) double fertilization

97. Fill in the blank :

The Delhi Art Gallery will be hosting a public exhibition of M. F. Husain's works and many art \_\_\_\_\_ from across the country are expected to be in attendance.

- (A) aficionados
- (B) auteurs
- (C) forerunners
- (D) denigrators

98. Select the correct active form of the given sentence :

Ramesh might be promoted this year.

- (A) They might promote Ramesh this year.
- (B) They will promote Ramesh this year.
- (C) You may promote Ramesh this year.
- (D) They should have promoted Ramesh this year.

99. Choose the appropriate indirect speech of the given sentence :

The receptionist said "What can I do for you?"

- (A) The receptionist asked what she can do for me.
- (B) The receptionist asked what she could do for me.
- (C) The receptionist asked what she can be doing for me.
- (D) The receptionist asked what could be done for me.

100. Pick the sentence in the passive voice :

- (A) The teacher praised the students.
- (B) The students praised the teacher.
- (C) The students were praised by the teacher.
- (D) The teacher was praising the students.

**SPACE FOR ROUGH WORK**

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