Paper Code No: B53 Question Booklet No. .....

ENTRANCE EXAMINATION – 2021 – 22

200054

SET – B

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New Delhi

Roll No. B5 3 2 0 0 5 4.

.....
Signature of Invigilator

Time: 1 Hour 30 Minutes **Total Marks: 100**

Instructions to Candidates

1. Do not write your name or put any other mark of identification anywhere in the OMR Response Sheet. IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR RESPONSE SHEET, the OMR sheet will be cancelled, and will not be evaluated.
2. **This Question Booklet contains the cover page and a total of 100 Multiple Choice Questions of 1 mark each.**
3. Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
4. There is negative marking in Multiple Choice Questions. For each wrong answer, 0.25 marks will be deducted.
5. USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iPhone, iPad, pager ETC. is strictly PROHIBITED.
6. Candidate should check the serial order of questions at the beginning of the test. If any question is found missing in the serial order, it should be immediately brought to the notice of the Invigilator. No pages should be torn out from this question booklet.
7. Answers must be marked in the OMR Response sheet which is provided separately. OMR Response sheet must be handed over to the invigilator before you leave the seat.
8. The OMR Response sheet should not be folded or wrinkled. The folded or wrinkled OMR/Response Sheet will not be evaluated.
9. Write your Roll Number in the appropriate space (above) and on the OMR Response Sheet. Any other details, if asked for, should be written only in the space provided.
10. There are four options to each question marked A, B, C and D. Select one of the most appropriate options and fill up the corresponding oval/circle in the OMR Response Sheet provided to you. The correct procedure for filling up the OMR Response Sheet is mentioned below.

CORRECT METHOD
(A) ● (C) (D)

WRONG METHODS							
(A) ⊗ (C) (D)	(A) ✓ (C) (D)	(A) ◐ (C) (D)	(A) ● (C) (D)	(A) ● (C) (D)	(A) ● (C) ●

1. Who was the first Education Minister of free India?

(A) Mahatma Gandhi (B) Maulana Abu! Kala m Azad

(C) Dr. B.R. Ambedkar (D) Dr. APJ Abdul Kalam

2. The move to allow the dumping of mercury _____anoutcry from residents of the area who_____that high levels of mercury will affect their health.

(A) resulted, insist (B) provoked, fear

(C) incited, determined (D) activated, accept

3. Select the word or phrase that is redundant and can be removed without changing the meaning of the text:

Although warm herbal drinks made from peppermint and chamomile are commonly called teas, they're more accurately and correctly known as tisanes.

(A) Peppermint (B) Commonly

(C) Accurately (D) Camomile

4. Each question below has two blanks, each blank indicating an omitted word. Choose the set of words for each pair of blanks that best fits the meaning of the sentence as a whole.

Drawing attention to the pitfalls of_____solely on uranium as a fuel for nuclear reactors, Indian scientists warned that uranium would not last for long and thus research on thorium as its_____must be revived.

(A) using, substitute (B) believing, replacement

(C) relying, alternative (D) reckoning, option

5. In the sentence given below a word is printed in bold. Below it four choices are given .Select the word which is closest in meaning to the word printed in bold and can replace it without altering the meaning of the sentence.

The leader nodded his approbation.

(A) Understanding (B) approval

(C) Admiration (D) adulation

6. Rashtra Geet of India *Vande Matram* was written by?

(A) Rabindranath Tagore

(B) Sardar Vallabhai Patel

(C) B.R. Ambedkar

(D) Bankim Chandra Chatterjee

7. Sunny is well acquainted _____him.

(A) Of (B) At

(C) With (D) By

8. In the following question choose the word which best expresses the meaning of the given word: Meld

(A) Soothe (B) Merge

(C) Purchase (D) Glisten

9. Fill in the blanks with one of the options given:

The five permanent member countries of the UN Security Council are:_____

(A) Germany, China, France, Russia, USA

(B) China, France, Russia, UK, USA

(C) India, France, Russia, China, USA

(D) Britain, Canada, India, Russia, USA

10. Choose the word which is the exact OPPOSITE of the word: Expand

(A) Convert

(B) Condense

(C) Congest

(D) Conclude

11. The total of the ages of Amar, Ajit and Atif is 80 years. What was the total of their ages three years ago?

(A) 73 years

(B) 72 years

(C) 71 years

(D) none of these.

12. In a chess tournament each of six players will play every other player exactly once. How many matches will be played during the tournament?

(A) 12

(B) 15

(C) 14

(D) 17

13. Complete the text with the correct word:

"We need to focus on building the tension leading up to this____turn of events", the director told the actors in the play.

(A) climatic
(B) climactic
(C) Conducive
(D) corrective

14. In each of the following questions find the alternative which will replace the question mark. Find the missing one: GI: HJ:: OQ : ?

(A) PS
(B) PR
(C) PQ
(D) QR

15. What number should come in the place of the question mark?

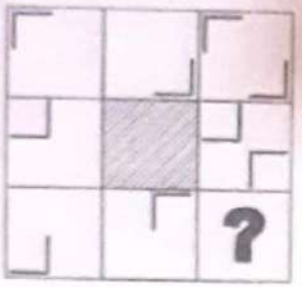
1	9	25	?	81	121

(A) 46
(B) 36
(C) 49
(D) 52

16. We had to pay more taxi fare because the driver brought us by a ..... route.

(A) Circular
(B) Circumscribed
(C) Longest
(D) circuitous

17. Which figure should be in the square with the question mark?



(A)  (B)  (C)  (D) 

18. In each of the following questions choose the alternative which will replace the Question mark. Elephants: trumpet : : Humans : ?

(A) howl (B) talk

(C) bleat (D) roar

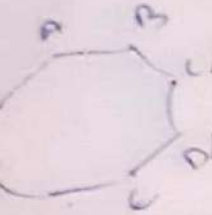
19. Choose the alternative which will replace the question mark.

Portray: Delineate :: Blessing : ?

(A) Benediction (B) Ignore

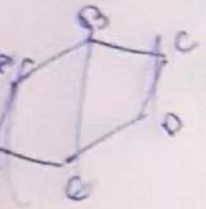
(C) Apathetic (D) None of these

20. Six friends A, B, C, D, E and F are sitting around the hexagonal table each at one comer and facing the centre of the table.



A is second to the left of F; B is the neighbor of C and D; E is second to the left of D. Find the third person to the right of F?

(A) D (B) A



(C) C (D) B

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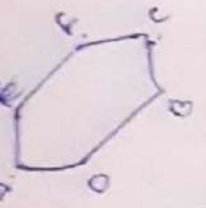
21. A simple harmonic motion is represented by $x\ (t) = sin^2 3\omega t - cos^2 3\omega t$. The angular frequency of oscillation is given by



(A) ω (B) $6\ \omega$

(C) $4\ \omega$ (D) $\omega/2$

22. A transverse wave is propagating on a stretched string with mass per unit length of 32 g/m. The tension on the string is 80 N. The speed of the wave in the string is

(A) 5/2 m/s (B) 40 m/s

(C) 2/25 m/s (D) 50 m/s

23. Alms : Donation :: Detest : ?

(A) Cheerful (B) Dislike

(C) Unfriendly (D) Normality

24. Some proverbs/idioms are given below together with their meanings. Choose the correct meaning of the proverb/idiom. To drive home:

(A) To find one's roots

(B) To return to place of rest

(C) To get back to original position

(D) To emphasize

25. To make a clean breast of it:

(A) To gain prominence.

(B) To praise oneself

(C) To confess without reserve

(D) To destroy before it blooms

26. A wave travelling along a stretched string is represented by $y = 5 \cos\pi (100t - 10x)$, its wave length is

(A) 2.0 cm

(B) 0.2 cm

(C) 0.5 cm

(D) 10 cm

27. For heavy nuclei, which of the following relation between the atomic number (Z) and mass number (A) is valid?

(A) $A = Z/2$

(B) $Z = A$

(C) $Z < A/2$

(D) $Z = A^2$

28. Which of the following compounds on hydrolysis gives acetylene?

(A) CaC_2 (B) Al_4C_3

(C) Mg_2C_3 (D) Cu_2Cl_2

29. Which of the vitamins given below is water soluble?

(A) Vitamin B_{12} (B) Vitamin C

(C) none (D) both

30. A mixture of soda ash and pearl ash is known as:

(A) Fusion mixture (B) Ignition mixture

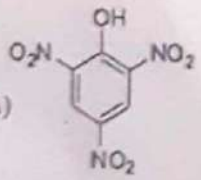
(C) Bordeaux mixture (D) Explosion mixture

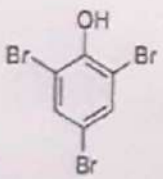
31. Fifteen grams of Cu^{66} undergoes radioactive decay and after 15 minutes only 1 g remains. The half - life, in minutes, is then

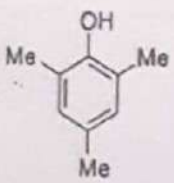
(A) 15 ln (2)/ln (15) (B) 15 ln (15)/ln (2)

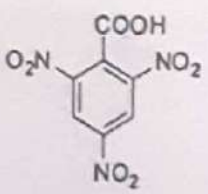
(C) 1 (D) 30

32. The structure of picric acid is:

(A) 

(B) 

(C) 

(D) 

33. Among CaH_2, BeH_2, BaH_2, The order of ionic character is

(A) $BeH_2 < BaH_2 < CaH_2$

(B) $CaH_2 < BeH_2 < BaH_2$

(C) $BeH_2 < CaH_2 < BaH_2$

(D) $BaH_2 < BeH_2 < CaH_2$

34. Which of the following cannot be emitted by radioactive substance during their decay?

(A) Protons (B) Neutrons

(C) Electrons (D) Helium

35. A charge Q is divided into two parts q and $Q-q$. If the Coulomb repulsive between them where they are separated is to be maximum, the ratio of Q/q should be

(A) 1:1 (B) 2:1

(C) 1:2 (D) 1:4

36. How many electrons are there in 1 coulomb of negative charge?

(A) 6.25×10^{18} (B) 62.5×10^{18}

(C) 6.023×10^{23} (D) 1.6×10^{-23}

37. Both the nucleus and the atom of some element are in their respective first excited states. They get de-excited by emitting photons of wavelengths λ_N, λ_A respectively. The ratio λ_N / λ_A is closest to:

(A) 10^{-6} (B) 10^{-12}

(C) 10^{-2} (D) 10^{-1}

38. Let F_{pp}, F_{pn} and F_{nn} denote the magnitude of the net force by a proton on a proton, by a proton on a neutron and by a neutron on a neutron respectively. Neglect gravitational force. When the separation is I fm

(A) $F_{pp} > F_{pn} = F_{nn}$ (B) $F_{pp} = F_{pn} > F_{nn}$

(C) $F_{pp} < F_{pn} = F_{nn}$ (D) $F_{pp} = F_{pn} = F_{nn}$

39. Chemically borax is:

(A) Sodium Meta borate (B) Sodium ortho borate

(C) Sodium tetra borate (D) Sodium tetraborate decahydrate

40. Which among the following is most acidic?

(A) CH_3COOH (B) CF_3COOH

(C) CCl_3COOH (D) Cl_3COOH

41. Which of the following compound is not aromatic?

(A) toluene (B) thiophene

(C) Pyridine (D) cyclobutadiene

42. A body is moving with uniform velocity of 8m/s. When the body just crossed another body, the second one starts and moves with uniform acceleration of 4m/s. The time after which two bodies meet will be

(A) 8s (B) 6s

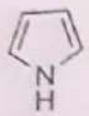
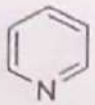
(C) 4s (D) 2s

43. Which of the following is correct relation for the root mean square speed (U_{rms}), average speed (U_{av}) and the most probable speed (U_{mp}):

(A) $U_{rms} > U_{av} > U_{mp}$ (B) $U_{rms} < U_{av} < U_{mp}$

(C) $U_{rms} > U_{av} = U_{mp}$ (D) $U_{rms} = U_{av} > U_{mp}$

44. Which of the following structure belongs to furan?

(A)  (B)  (C)  (D) 

45. The equations of waves emitted by S_1, S_2, S_3 and S_4 are respectively

$y_1 = 20 \sin (100\pi t)$

$y_1 = 20 \sin (200\pi t)$

$y_3 = 10 \cos (100 \pi t)$

and $y_4 = 20 \cos (100 \pi t)$

The phenomenon of interference will be produced by

(A) Interference not possible (B) y_1 and y_2

(C) y_1 and y_3 (D) y_1 and y_4

46. A force F is given by $F=at + bt^2$, where t is time. What are the dimensions of constants a and b?

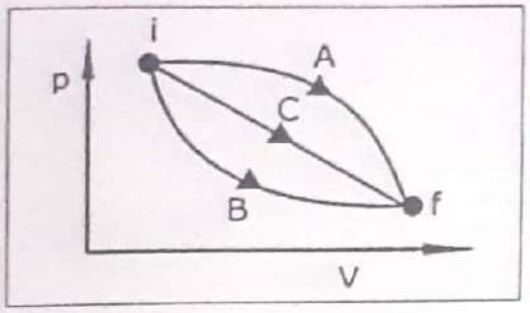
(A) $[a] = [MLT^{-3}]$, $[b] = [MLT^{-4}]$

(B) $[a] = [MLT^{-2}]$, $[b] = [MLT^{-3}]$

(C) $[a] = [ML^{-1}T^{-1}]$, $[b] = [ML^{-1}T^{-2}]$

(D) $[a] = [ML^{-1}T^{-3}]$, $[b] = [ML^{-1}T^{-4}]$

47. The P V- diagram below shows three possible paths for an ideal gas to reach the final state f from an initial state i. Which among the following statements is correct?



(A) The work done is least for path C.

(B) Mini mum change in the internal energy occurs along path A.

(C) The work done is maximum for path A

(D) Work done is the same for all the paths.

48. Match the following:

	Law		Relationship
I.	Boyle's	A.	Volume-Amount
II.	Charle's	B.	Pressure-Volume
III.	Avogadro	C.	Pressure-Temperature
IV.	Gay Lussac's	D.	Temperature-Volume

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

(C) 1-B, II-A, III-D, IV-C **(D) 1-D, II-B, III-A, IV-C**

49. Two identical monoatomic gases at temperature T 1 and T2 are mixed so that there is no loss of energy. If the masses and the number of the molecules of the two gases are m l, m2 and n l, n2 respectively. The temperature of the mixture is:

(A) $T = \frac{n_1 T_2 + n_2 T_1}{n_1 + n_2}$

(B) $T = \frac{n_1 T_1 + n_2 T_2}{n_1 + n_2}$

(C) $T = \sqrt{\frac{n_1 T_2 + n_2 T_2}{n_1 + n_2}}$

(D) $T = \frac{n_1 \sqrt{T_1} + n_2 \sqrt{T_2}}{n_1 + n_2}$

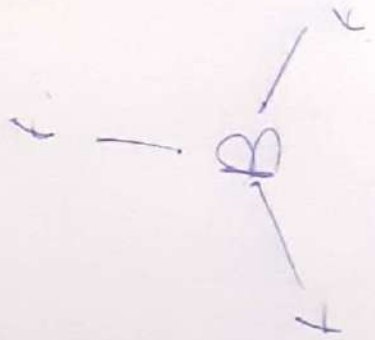
50. How many bonding and non-bonding electron pairs are found in the BF3 molecule?

(A) 1 bonding and 3 non-bonding

(B) 2 bonding and 2 non-bonding

(C) 3 bonding and 1 non-bonding

(D) 3 bonding and 0 non-bonding



51. Match the following:

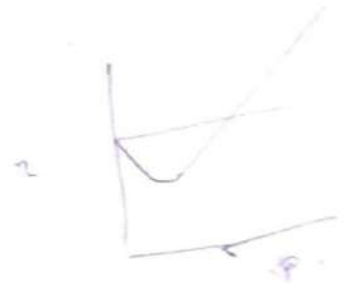
Compressibility factor (Z)	Condition
I. Z=1	A. At high pressure for al l the gases
II. Z ::::1	B. For ideal gas at all temperatures and pressures
III. Z > 1	C. At intermediate pressures for most gases
IV. Z < 1	D. At very low pressures for all gases

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

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

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

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



52. The strongest conjugate base among the following is

(A) NO_3^-

(B) Cl^-

(C) SO_4^{2-}

(D) $CH3COO^-$

53. All photons of the electromagnetic spectrum have the same

(A) Velocity

(B) Frequency

(C) Wavelength

(D) Wave number

54. Which of the following waves cannot be polarized?

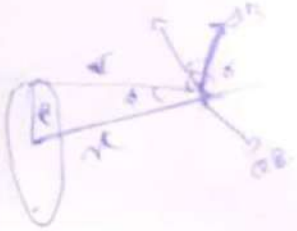
(A) Radio waves (B) X-rays

(C) Longitudinal waves in a gas (D) gamma rays

55. A circular current carrying coil has a radius R. The distance from the centre of the coil on the axis, where the magnetic induction will be 118 to its value at the centre of the coil is

(A) $R\sqrt{3}$ (B) $2R\sqrt{2}$

(C) $R\frac{1}{\sqrt{3}}$ (D) $R\frac{2}{\sqrt{3}}$



56. Which of the following reaction is called as 'Clemmensen reduction?

(A) Reduction of acyl halide with $H_2/Pd/BaS0_4$

(B) Reduction of ester with Na/C_2H_5OH

(C) Reduction of anhydride with $LiAlH_4$

(D) Reduction of carbonyl compounds with Na/Hg/HCl

57. An ideal gas undergoes an isothemal expansion (at temperature T) from volume V_1 to V_2. The entropy changes per mole

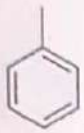
(A) $-R(V_1/V_2)$ (B) $-R(V_2/V_1)$

(C) $-R \ln(V_2/V_1)$ (D) $-R \ln(V_1/V_2)$

58. A Proton and an α-particle have the same de Broglie wave length. What is the same for both of them?

(A) Energy
(B) Velocity
(C) Mass
(D) Momentum

59. Which of the following will undergo nitration faster?

(A) 
(B) 
(C) 
(D) 

60. Which one of the following ions has the same electron configuration as the Al^{3+} cation?

(A) F^-
(B) Cl^-
(C) s_2^-
(D) Mg^+

61. There identical spheres of mass m each are placed at the corners of an equilateral triangle of side 2 m. Taking one of the corners as the origin, the position vector of the centre of mass is

(A) $\sqrt{3}\,(\hat{i}+\hat{j})$
(B) $\sqrt{3}\,(\hat{i}-\hat{j})$
(C) $\frac{\hat{i}}{\sqrt{3}}+\hat{j}$
(D) $\hat{i}+\frac{\hat{j}}{\sqrt{3}}$

62. A circular hole of diameter R is cut from a disc of mass M and radius R; the circumference of the cut passes through the centre of the disc. The moment of inertia of the remaining portion of the disc about an axis perpendicular to the disc and passing through its centre is

(A) $\frac{15}{32MR^2}$ (B) $\frac{1}{8MR^2}$

(C) $\frac{3}{8MR^2}$ (D) $\frac{13}{32MR^2}$

63. Among the following, the more stable carbocation is:

(A)  (B)  (C)  (D) 

64. Iron carbonyl, Fe $(C0)_5$ is:

(A) Trinuclear (B) Mononuclear

(C) Tetranuclear (D) Dinuclear

65. A spring balance is attached to the ceiling of a lift. A man hangs his bag on the spring and the spring reads 49N, when the lift is stationary. If the lift moves downward with an acceleration of 5 m/s^2, the reading of the spring balance will be

(A) 24N (B) 20N

(C) 34N (D) 30N

66. A solid sphere having mass m and radius r rolls down an inclined plane. Then its kinetic energy is:

(A) 5/7 rotational and 2/7 translational

(B) 2/7 rotational and 5/7 translational

(C) 2/5 rotational and 3/5 translational

(D) 1/2 rotational and 1/2 translational

67. Which one of the following substances will form strong hydrogen bonds?

(A) HCOOH (B) CH_3CN

(C) CCl_4 (D) SiH_4

68. Approximate relationship between dissociation constant of water (K) and ionic product of water (Kw) is

(A) $K_w = K$ (B) $K_w = 55.6 \times K$

(C) $K_w = 18 \times K$ (D) $K_w = 14 \times K$

69. Which is correct for the given reaction $\frac{1}{2} A \rightarrow 2B$

(A) $-\frac{\partial[A]}{\partial t} = \frac{\partial[B]}{\partial t}$ (B) $-\frac{\partial[A]}{\partial t} = \frac{4\partial[B]}{\partial t}$

(C) $-\frac{\partial[A]}{\partial t} = \frac{1}{2}\frac{\partial[B]}{\partial t}$ (D) $-\frac{\partial[A]}{\partial t} = \frac{1}{4}\frac{\partial[B]}{\partial t}$

70. A boy playing on the roof of a 10m high building throws a ball with a speed of 10 m/s at an angle of 30° with the horizontal. How far from the throwing point will the ball be at the height of 10m from the ground? [g = 10 m/s^2, sin 30° = 1/2, cos 30° = $\sqrt{3}/2$]

(A) 5.20 m (B) 4.33 m

(C) 8.66 m (D) 2.60 m

71. Which of the following oxides is most acidic in nature?

(A) Bao (B) BeO

(C) MnO (D) Cao

72. If 60% of a first order reaction was completed in 60 minutes. How much time required for the for the 50% completion of the same reaction in approximately?

(A) 40 minutes (B) 45 minutes

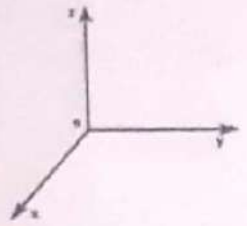
(C) 50 minutes (D) 60 minutes

73. An aqueous solution freezes at -0.093°C. What is the elevation in boiling point for the same solution? (K_f = 1 .86 K m^{-1}, K_b = 0.51 2 K m- ^{1})

(A) 0.186 (B) 0.256

(C) 0.256/0 .186 (D) 0.0256

74. A four-digit number is formed by the digits 1, 2, 3, 4 with no repetition. The probability that the number is odd, is



(A) Zero (B) ¼

(C) ½ (D) 1/3

75. If A and B are two matrices of same order, then A+B is equal to

(A) B+A (B) BA

(C) $(A+B)^T$ (D) A-B

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76. If A and B are two matrices such that AB = B and BA = A, then $A^2 + B^2$ is equal to

(A) A+B (B) 2AB

(C) 2BA (D) AB

77. How many structural isomers are possible if one hydrogen in diphenylmethane is replaced by bromine atom?

(A) 1 (B) 2

(C) 4 (D) 5

78. Which scientist formulated the theory of relativity?

(A) Isaac Newton (B) Albert Einstein

(C) Benjamin Franklin (D) Marie Curie

79. Nita walked 100 metres towards North, took a left tum and walked 50 metres. She again took a left turn and walked 50 metres. How far is she from the starting point?

(A) $10(5)^{1/2}$ metres (B) $5(10)^{1/2}$ metres

(C) 45 metres (D) 50 metres

80. The value of $\cos^{-1}(\frac{1}{2}) + 2\sin^{-1}(\frac{1}{2})$ is equal to

(A) $\frac{\pi}{4}$ (B) $\frac{\pi}{6}$

(C) $\frac{2\pi}{3}$ (D) $\frac{\pi}{4}$

81. The modulus and amplitude of $\frac{1+2i}{1-(1-i)^2}$ are

(A) $\sqrt{2}$ and $\frac{\pi}{6}$ (B) 1 and $\frac{\pi}{4}$

(C) 1 *and* 0 (D) 1 and $\frac{\pi}{3}$

82. The IUPAC name of benzoyl chloride is:

(A) Phenyl chloro ketone (B) benzene carbonyl chloride

(C) Benzene chloro ketone (D) chloro phenyl ketone

83. The reaction of HCOOH with conc.H2S04 gives:

(A) CO_2 (B) acetic acid

(C) CO (D) malic acid

84. The first novel gas compound discovered by Bartlett is

(A) XeF_2 (B) KrF_2

(C) XeO_3 (D) $XePtF_6$

85. Let a ∈ R and let f: R→ R be given by $f(x) = x^5 - 5x + a$, then

(i) f (x) has three real roots if a > 4

(ii) f (x) has only one real root if a > 4

(iii) f(x) has three real roots if a < - 4

(iv) f(x) has three real roots if -4 < a < 4

(A) (ii) (B) (ii) and (iii)

(C) (ii) and (iv) (D) (iv)

86. The domain of the function $f(x) = 1/(x^2-3x+2)$ is

(A) $(-\infty, 1)$ (B) $(-\infty, 1) \cup (2, +\infty)$

(C) $(-\infty, 1) \cup (2, +\infty)$ (D) $(1, \infty)$

87. Which one of the following complexes can exhibit geometrical isomerism?

(A) $[Pt(NH_3)_2Cl_2]$ (square planar)

(B) $[Zn(NH_3)_2Cl_2]$ (tetrahedral)

(C) $[Cu(NH_3)_4]^{2+}$ (square planar)

(D) $[Co(NH_3)_5Cl]^{2+}$ (octahedral)

88. Which of the following statement is correct regarding the photoelectric experiment?

(A) The photocurrent increases with wavelength of light

(B) Stopping potential increases with increase in intensity of incident light

(C) The photocurrent increases with increase in frequency of light

(D) All of the above

89. Range of $f(x) = \frac{1}{1-2\cos x}$ is

(A) $\left[\frac{1}{3}, 1\right]$ (B) $\left[-1, \frac{1}{3}\right]$

(C) $(-\infty, 1)\left[\frac{1}{3}, \infty\right]$ (D) $\left[-\frac{1}{3}, 1\right]$

90. Two coherent monochromatic light beams of intensities I and 4I superimpose. The maximum and minimum possible intensities in the resulting beam are:

(A) 8I and I
(B) 5I and 3I
(C) 3I and I
(D) 9I and I

91. On dissolving I mole of a non-volatile solute 'S' in 2 mol of water. The vapor pressure of solution S relative to that of water is

(A) 2/3
(B) 1/3
(C) 3/2
(D) 4/3

92. Number of H^+ ions given by one molecule of H_3PO_2 when dissolved in water is:

(A) 1
(B) 2
(C) 3
(D) Zero

93. $\int |x|^3 dx =$

(A) x^{44}
(B) $-x^{44}$
(C) $|x|^{44}$
(D) none of these

94. The parabola $y^2 = 4x + 1$ divides the disc $x^2 + y^2 < 1$ into two regions with areas A_1 and A_2. Then $|A_1 - A_2|$ equals

(A) $\frac{1}{3}$
(B) $\frac{2}{3}$
(C) $\frac{\pi}{4}$
(D) $\frac{\pi}{3}$

95. What is the correct relation between standard Gibb's energy and equilibrium constant of the reaction taking place in the cell?

(A) $\Delta_r G^\ominus = RT \ln K$ (B) $\Delta_r G^\ominus = - RT \ln K$

(C) $\Delta_r G^\ominus = (1/RT) \ln K$ (D) $\Delta_r G^\ominus = - (1/RT) \ln K$

96. In which one of the following species does the transition metal ion have d^3 electronic configuration?

(A) $[Cr(NH_3)_6]^{3+}$ (B) $[Co(OH_2)6]^{2+}$

(C) $[CoF_6]^{3-}$ (D) $[Fe(CN)_6]^{3-}$

97. Rhombic Sulphur consists of:

(A) S_8 rings (B) S_2 molecules

(C) S_4 rings (D) S_8 rings

98. For a reaction, R→P

the rate of reaction is equal to

(A) -k [R] (B) - k [R]0

(C) k [R] (D) k [R]0

99. Which of the following is amphoteric oxide?

Mn_2O_7, CrO_3, Cr_2O_3, CrO, V_2O_5, V_2O_4

(A) V_2O_5, Cr_2O_3 (B) Mn_2O_7, CrO_3

(C) CrO, V_2O_5 (D) V_2O_5, V_2O_4

100. The shape of Xe02F2 molecule is:

(A) Tetrahedral (B) Square planar

(C) Trigonal bipyramidal (D) See-saw