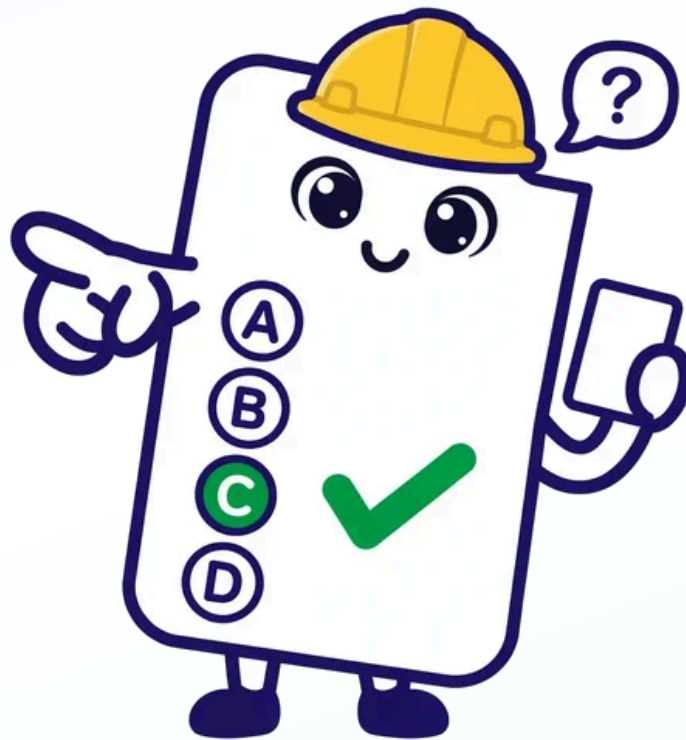




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ETEA Engineering Admission Test Preparation Book 2026

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100 MCQs

Real ETEA Engineering Admission Test subject split

Answer key + online explanations

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What is in this book

100 MCQs across one paper, each drawn in the same subject split as the real ETEA Engineering Admission Test paper:

- Mathematics: 30 MCQs per paper
- Physics: 30 MCQs per paper
- Chemistry: 30 MCQs per paper
- English: 10 MCQs per paper



MODEL PAPER 1 OF 1

ETEA Engineering Admission Test

100 MCQs · 120 minutes · answer key at the back

**Mathematics**

30 MCQs

1. The capacity of a cylindrical tank is 246.4 litres. If the height is 4 metres, what is the diameter of the base ?

- ☐ A 1.4 m ☐ B 2.8 m
☐ C 14 m ☐ D None of these

2. I. $x^2 - x - 42 = 0$, II. $y^2 - 17y + 72 = 0$ to solve both the equations to find the values of x and y?

- ☐ A If $x < y$
☐ B If $x > y$
☐ C If $x \leq y$
☐ D If $x \geq y$
☐ E If $x = y$ or the relationship between x and y cannot be established.

3. A, B, C together started a business. A invested Rs.6000 for 5 months B invested Rs.3600 for 6 months and C Rs.7500 for 3 months. If they get a total profit of Rs.7410. Find the share of A?

- ☐ A Rs.3750 ☐ B Rs.3000
☐ C Rs.3200 ☐ D Rs.2160

4. The ratio of the volumes of two cubes is 729 : 1331. What is the ratio of their total surface areas?

- ☐ A 81 : 121 ☐ B 9 : 11
☐ C 729 : 1331 ☐ D 27 : 12

5. $1 - 2x + 3x^2 - 4x + \dots =$

- ☐ A $(1+x)^{-2}$ ☐ B $(1+x)^{-3}$
☐ C $(1-x)$ ☐ D $(1+x)^{-1}$

6. The length of a rectangle is increased by 60 %. By what percent would the width have to be decreased to maintain the same area?

- ☐ A $37 \frac{1}{2} \%$ ☐ B 60 %
☐ C 75 % ☐ D none of these

7. Area of a square with side x is equal to the area of a triangle with base x. The altitude of the triangle is: _____?

- ☐ A $x/2$ ☐ B x
☐ C 2x ☐ D 4x

8. Find the roots of quadratic equation: $x^2 + x - 42 = 0$?

- (A) -6, 7
- (B) -8, 7
- (C) 14, -3
- (D) -7, 6

9. Three 6 faced dice are thrown together. The probability that exactly two dice show the same number on them is -.

- (A) $5/9$
- (B) $5/12$
- (C) $1/36$
- (D) $7/12$

10. The length and breadth of a square are increased by 40% and 30% respectively. The area of the resulting rectangle exceeds the area of the square by:_____?

- (A) 42%
- (B) 62%
- (C) 82%
- (D) none of these

11. Find the one which does not belong to that group ?

- (A) Part
- (B) Trap
- (C) Cart
- (D) Dart
- (E) Mart

12. How much time will it take for an amount of Rs. 900 to yield Rs. 81 as interest at 4.5% per annum of simple interest?

- (A) 2 years
- (B) 3 years
- (C) 1 year
- (D) 4 years

13. If the side of a square is increased by 30 %. Its area is increased by:_____?

- (A) 9 %
- (B) 30 %
- (C) 60 %
- (D) 69 %

14. The number of ordered pairs that satisfy the inequality is

- (A) finite
- (B) infinite
- (C) unique
- (D) None

15. A sum of money placed at compound interest doubles itself in 4 years. In how many years will it amount to eight times itself?

- (A) 16
- (B) 8
- (C) 12
- (D) 20

16. The area of the square formed on the diagonal of a rectangle as its side is $108\frac{1}{3}\%$ more than the area of the rectangle. If the perimeter of the rectangle is 28 units, find the difference between the sides of the rectangle?

- (A) 8 (B) 12
(C) 6 (D) 2

17. (i). $a^2 - 7a + 12 = 0$, (ii). $b^2 - 3b + 2 = 0$ to solve both the equations to find the values of a and b?

- (A) if $a < b$
(B) if $a \leq b$
(C) if the relationship between a and b cannot be established.
(D) if $a > b$

18. If the arithmetic mean of seventy five numbers is calculated, it is 35. If each number is increased by 5, then mean of new number is _____?

- (A) 30 (B) 40
(C) 70 (D) 90

19. The cross-section of a canal is a trapezium in shape. If the canal is 10 m wide at the top and 6 m wide at the bottom and the area of cross-section is 640 sq m, the depth of canal is _____?

- (A) 20 m (B) 60 m
(C) 40 m (D) 80 m

20. The coefficient of x in the expansion of $(1 + x + x^2 + x^3 \dots)^2$ is:

- (A) n (B) n-1
(C) n-2 (D) n+1

21. Out of 100 students, 50 failed in English and 30 in Mathematics. If 12 students fail in both English and Mathematics. Then the number of students who passed in both the subjects is _____?

- (A) 26 (B) 28
(C) 30 (D) 32

22. A circular wire of radius 42 cm is cut and bent in the form of a rectangle whose sides are in the ratio of 6:5 The smaller side if the rectangle is: _____?

- (A) 30 cm (B) 60 cm
(C) 72 cm (D) 132 cm

23. If the term independent of x in $(\sqrt{x} + k/x^2)^{10}$ is 405, then

- (A) 3 (B) ± 3
(C) -3 (D) -2

24. The sale price of an article including the sales tax is Rs. 616. The rate of sales tax is 10%. If the shopkeeper has made a profit of 12%, then the cost price of the article is:

- (A) Rs. 500 (B) Rs. 515
(C) Rs. 550 (D) Rs. 600

25. A wooden box of dimensions 8m x 7m x 6m is to carry rectangular boxes of dimensions 8cm x 7cm x 6cm. The maximum number of boxes that can be carried in 1 wooden box is?

- (A) 1200000 (B) 1000000
(C) 9800000 (D) 7500000

26. Find the one which does not belong to that group ?

- (A) 20 (B) 42
(C) 58 (D) 72

27. Twelve men can do a work in twenty days while twenty women can finish the same work in sixteen days. Find the ratio between the capacity of a man and a woman.

- (A) 3:4 (B) 5:4
(C) 4:3 (D) 5:3

28. The length of a rectangle is two - fifths of the radius of a circle. The radius of the circle is equal to the side of the square, whose area is 1225 sq.units. What is the area (in sq.units) of the rectangle if the breadth is 10 units?

- (A) 140 (B) 156
(C) 175 (D) 214

29. The expansion of $(1-2x)^{-2}$ is valid if:

- (A) $|x| < 0$ (B) $|x| < 1/2$
(C) $|x| < 2$ (D) $|x| < 1$

30. Two numbers 4242 and 2903 when divided by a certain number of three digits, leave the same remainder. Find the number?

- (A) 101 (B) 103
(C) 107 (D) 113



Physics

30 MCQs

31. Loudness of the sound is directly related to

- (A) Intensity of sound (B) Frequency of sound
(C) Wavelength of sound (D) Pitch of sound

32. A student measures a current as 0.05 A. Which of the following correctly expresses this result?

- (A) 50 mA
- (B) 50 μ A
- (C) 500 mA
- (D) 500 μ A

33. The unit of magnetic flux density is;

- (A) Wbm^{-1}
- (B) Wbm
- (C) Wbm^{-2}
- (D) Wb

34. The minimum number of unequal forces whose vector sum can be zero is

- (A) One
- (B) Two
- (C) Three
- (D) Four

35. The orbital speed of satellite orbiting around the Earth is:

- (A) $\sqrt{GM/R_e}$
- (B) $\sqrt{GM_e/R_e}$
- (C) $\sqrt{GM_e/R^2}$
- (D) $\sqrt{GM_e/h}$

36. A certain radioactive mass decays from 64 gm to 2 gm in 20 days. What is its half - life?

- (A) 5 days
- (B) 4 days
- (C) 10 days
- (D) 6 days

37. The process of generating three-dimensional image of the object using laser beam is called:

- (A) Holography
- (B) Tomography
- (C) Scanning
- (D) 3-D Cinema

38. In Milikan's Method, the radius of droplet can be calculated by:

- (A) $r = \sqrt{qvt / 2pg}$
- (B) $r^2 = 9\eta vt / pg$
- (C) $r^2 = 9\eta vt / 2pg$
- (D) $r = 9\eta vt / 2pg$

39. Which particle has the shortest wavelength, if all are Having the same velocity?

- (A) Electron
- (B) Proton
- (C) Neutron
- (D) α - particle

40. The source of emf transfers its maximum power to the external circuit when (r = internal resistance and R = load resistance):

- (A) $r = 0$
- (B) $r = R$
- (C) $r < R$
- (D) $r > R$

41. The Lenz's law refers to induced _.

- (A) emf.
- (B) Resistance.
- (C) Shear
- (D) Currents.

42. The duration of meta stable state is approximately:

- (A) 10-8s
- (B) 10-3s
- (C) 10-10s
- (D) 10-6s

43. The substances like germanium and silicon have:

- (A) Negative temperature coefficients
- (B) Positive temperature coefficients
- (C) Both A and B
- (D) None of the above

44. 22,320 Cal heat is supplied to 100g of ice at zero degrees centigrade. If the latent heat of fusion of ice is 80 Cal /g and the latent heat of vaporization of water is 540 Cal/g, the final amount of water thus obtained and its temperature, respectively are:

- (A) 8g, 100 degree centigrade
- (B) 100g ,90 degree centigrade
- (C) 92g, 100 degree centigrade
- (D) 82g, 100 degree centigrade

45. In simple A.C capacitive circuit:

- (A) The voltage leads current by 90°
- (B) The voltage leads current by 180°
- (C) The current leads voltage by 90°
- (D) The current and voltage are in phase

46. In order to determine the maximum height of the projectile, the equation of motion used is:

- (A) $as = v_f^2 - v_i^2$
- (B) $2as = v_f^2 - v_i^2$
- (C) $2S = a(v_f^2 - v_i^2)$
- (D) $as = 2(v_f^2 - v_i^2)$

47. A person stops his friend on a bicycle by pulling him opposite to bicycle's motion, the work done by him is:

- (A) Negative
- (B) Positive
- (C) Zero
- (D) All of the above

48. A device that converts AC into DC is called:

- (A) Diode
- (B) Transistor
- (C) Capacitor
- (D) Inductor

49. The S.I unit capacitance of a capacitors is:

- (A) Coulomb
- (B) Volt
- (C) Farad
- (D) Ampere

50. The centripetal acceleration of an object moving along a circle of radius 'r' with an angular speed 'w' is given by the formula:

- (A) $a = r W^2$
- (B) $a = r W$
- (C) $a = r^2 W$
- (D) $a = r^2 W^2$

51. Two coherent monochromatic sets of waves will interfere constructively in the region of superposition only if the path difference between them is :

- (A) Half wavelength
- (B) Integral number of wavelength
- (C) Quarter wavelength
- (D) Odd integral number of half wavelength

52. The density of steel ball was determined by measuring the mass and diameter. The mass was measured with 1% and diameter 3% of the error. In the calculated density of the steel ball is at most;

- (A) 2%
- (B) 8%
- (C) 4%
- (D) 10%

53. A charge of two microcoulombs ($2 \mu\text{C}$) moves with velocity of two meter per second (2 m/sec) in the direction of two Tesla magnetic field. The force that will act on it will be:

- (A) 2 N
- (B) Zero
- (C) 8 N
- (D) 4 N

54. Two equal, anti-parallel, and nonconcurrent forces are:

- (A) Couple
- (B) Couple arm
- (C) Collinear forces
- (D) Torque

55. Choose the correct option.

- (A) Newton discovered that gravity pulled everything away from it.
- (B) None of these is correct.
- (C) Both of these are correct
- (D) Newton discovered that gravity pulls everything towards it.

56. One up quark and 2 down quarks. when Combine, make a:

- (A) Neutron
- (B) Proton
- (C) Electron
- (D) Positron

57. When monochromatic light of wavelength $5.0 \times 10^{-7} \text{ m}$ is incident normally on a plane diffraction grating, the second order diffraction lines are formed at angles of 30° to the normal to the grating. What is the number of lines per millimeter of the grating?

- (A) 250
- (B) 500
- (C) 1000
- (D) 4000

58. The maximum drag force on a sphere falling with zero acceleration is 9.8 N its real weight is:

- (A) Zero
- (B) 9.8 N
- (C) 4.9N
- (D) 19.6N

59. The proper time between two events is measured by a clock at rest in a reference frame in which the two events:

- (A) Occurs at the same time
- (B) Occur at the same co-ordinates
- (C) Are separated by the distance a light signal can travel during the time interval
- (D) Satisfy none of the above

60. The terminal voltage of a battery is observed to fall when the battery supplies a current to an external resistor. What quantities are needed to calculate the fall in voltage?

- (A) The battery's e.m.f and its internal resistance
- (B) The battery's e.m.f and the current
- (C) The current and the battery's internal resistance
- (D) The current and the external resistance



Chemistry

30 MCQs

61. Formula of wood spirit is:

- (A) C_2H_5OH
- (B) CH_3OH
- (C) $HCHO$
- (D) CH_3COOH

62. Which region of electromagnetic spectrum is involved in nuclear magnetic resonance microwave(NMR spectroscopy)?

- (A) Microwave
- (B) Radio wave
- (C) Infrared region
- (D) X-rays

63. Reaction of triglycerides with alkalies is called:

- (A) Hydration
- (B) Saponification
- (C) Hardening
- (D) Dehydration

64. What is the cell reaction of $Zn(s) | Zn^{2+}(aq) 1M | Ni^{2+}(aq) 1M | Ni(s)$ $Zn^{2+}(aq) + 2e^- \rightarrow Zn(s)$, $E_o = -0.76 V$ $Ni^{2+}(aq) + 2e^- \rightarrow Ni(s)$, $E_o = -0.25 V$

- (A) $Ni^{2+} + Zn \rightarrow Zn^{2+} + Ni$
- (B) $Zn^{2+} + Ni \rightarrow Ni^{2+} + Zn$
- (C) $Zn^{2+} + Ni^{2+} \rightarrow Zn + Ni$
- (D) $Zn + Ni \rightarrow Zn^{2+} + Ni^{2+}$

65. Electron affinity decreases down the group because:

- (A) Proton number increases
- (B) Atomic radius increases
- (C) Shielding decrease
- (D) Atomic radius decreases

66. What is the % relative humidity at 25 °C and 0.01876 atm if the vapor pressure of water is 23.76 mm Hg?

- (A) 40%
- (B) 50%
- (C) 60%
- (D) 70%

67. A sample of an organic compound consisting of carbon, hydrogen and oxygen was subjected to combustion analysis. 0.5439g of this compound gave 1.039g of carbon dioxide and 0.6346g of water vapours. The empirical formula of this compound is:

- (A) CH₂O
- (B) C₄H₁₂O₂
- (C) C₂H₆O
- (D) CH₄O

68. Thermite process is:

- (A) Exothermic
- (B) Endothermic
- (C) Reversible
- (D) None of above

69. Which metal is used generally for the filament of electric bulbs?

- (A) Pt
- (B) Fe
- (C) Cu
- (D) W

70. Natural rain forms _ in the presence of carbon dioxide in the air.

- (A) Smog
- (B) Ozone
- (C) Carbonic acid
- (D) Chlorofluorocarbons

71. Rate of any reaction depends upon:

- (A) Temperature
- (B) Concentration
- (C) Pressure
- (D) Rate constant
- (E) All of the above

72. The balanced chemical equation to manufacture ammonia by Haber's Process is:

- (A) $3\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$
- (B) $\text{N}_2(\text{g}) + \text{H}_2(\text{g}) \rightleftharpoons \text{NH}_3(\text{g})$
- (C) $3\text{N}_2(\text{g}) + \text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$
- (D) $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$

73. The shape of an orbital is determined by which quantum number?

- (A) n
- (B) l
- (C) m
- (D) s

74. A gas diffuses 1/2 times as fast as hydrogen, its molecular mass is:

- (A) 50 amu
- (B) 25 amu
- (C) 16 amu
- (D) 8 amu

75. Which one is the strongest conjugate base:

- ☐ A Sulphate ion
- ☐ B Hydroxyl ion
- ☐ C Per chlorate ion
- ☐ D Iodide ion

76. During the formation of addition polymers, which smaller molecules you think are eliminated:

- ☐ A H₂O
- ☐ B HCl
- ☐ C NH₃
- ☐ D No molecules are eliminated

77. A single molecule of haemoglobin is composed of:

- ☐ A Three polypeptide chains
- ☐ B Four polypeptide chains
- ☐ C Five polypeptide chains
- ☐ D Six polypeptide chains

78. The process of filtration is used to separate particles _ from liquids.

- ☐ A Radial.
- ☐ B Angular.
- ☐ C Insoluble.
- ☐ D Soluble

79. How many chain isomer can be obtained from alkane C₆H₁₄ :

- ☐ A 7
- ☐ B 6
- ☐ C 5
- ☐ D 4

80. Neopentylchloride belongs to which class of alkyl halides?

- ☐ A Primary alkyl halides
- ☐ B Secondary alkyl halides
- ☐ C Tertiary alkyl halides
- ☐ D Quaternary alkyl halides

81. Nitrobenzene reacts with chlorine in the presence of AlCl₃, the product obtained is:

- ☐ A m-chloro nitrobenzene
- ☐ B o-chloro nitrobenzene
- ☐ C p-chloro nitrobenzene
- ☐ D All of above

82. The reduction of aldehydes and ketones in the presence of zinc amalgam and HCl is termed as:

- ☐ A Grignard reduction
- ☐ B Clemmenson reduction
- ☐ C Wolf-kishner reduction
- ☐ D Friedel-craft reduction

83. In one molal aqueous solution of C₂H₃OH the mole fraction of C₂H₅OH is :

- ☐ A 0.1
- ☐ B 0.9
- ☐ C 0.0177
- ☐ D 1.0

84. In 1956, Dorothy Crowfoot Hodgkin discovered the structure of Vitamin B₁₂ or its other name 'Cobalamin' because it has a transition metal, cobalt, as the central atom surrounded by complex amine groups and other complex functional groups as multidentate ligands. Based on the structure of Cobalamin, presented below in the picture, what could be the coordination number?

- ☐ A 3
- ☐ B 4
- ☐ C 5
- ☐ D 6

85. All of the following crystal systems have $\alpha=\beta=\gamma=90^\circ$ except:

- (A) Cubic
- (B) Orthorhombic
- (C) Tetragonal
- (D) Rhombohedral

86. Which one of the following groups is indicated when HCl is formed by reaction of ethanol with phosphorus pentachloride:

- (A) Amino group
- (B) Hydroxyl group
- (C) Halide group
- (D) Hydride group

87. Continuous adsorption spectrum is obtained from:

- (A) excited atoms
- (B) Excited molecules
- (C) Ground state molecules
- (D) Ground state atoms

88. Acetic acid is reacted with NH_3 , and resulting compound is strongly heated. Identify the compound formed?

- (A) $\text{CH}_3 - \text{NH}_2$
- (B) $\text{O} || \text{CH}_3 - \text{C} - \text{NH}_2$
- (C) $\text{O} || \text{CH}_3 - \text{C} - \text{H}$
- (D) $\text{CH}_3 - \text{C} \equiv \text{N}$

89. Which one is a spontaneous chemical reaction?

- (A) $\text{Zn} + \text{Cu}^{2+} \rightarrow \text{Zn}^{2+} + \text{Cu}$
- (B) $\text{Zn}^{2+} + \text{Cu} \rightarrow \text{Cu}^{2+} + \text{Zn}$
- (C) $2 \text{Fe}(\text{OH})_3 \rightarrow 2 \text{Fe} + 3/2 \text{O}_2 + 3 \text{H}_2\text{O}$
- (D) $2\text{NaCl} \rightarrow 2\text{Na} + \text{Cl}_2$

90. Which of the following atoms in the given oxidation state have the highest electro negativity.

- (A) Mo(ii)
- (B) Mo(iii)
- (C) Mo(v)
- (D) Mo(vi)



English

10 MCQs

91. Identify the word or phrase that needs to be changed for the sentence to be correct: I have visited them a couple of times during my stay in Mexico.

- (A) I have
- (B) Couple
- (C) Of
- (D) Stay
- (E) No error

92. He _ the incident to the back of his mind.

- (A) Revered
- (B) Regulated
- (C) Reagitated
- (D) Relegated

93. Maria _ that she could not attend classes next week.

- (A) Told his professors
- (B) Said her professors
- (C) Told her professors
- (D) Is telling her professors

94. Identify the correct article to complete the sentence: I saw _ shooting star last night.

- (A) A
- (B) An
- (C) The
- (D) No article needed

95. Chose the antonym of the word "Untenable"

- (A) Tender
- (B) Sheepish
- (C) Supportable
- (D) Tremulous

96. Pick the correct option:

- (A) No star is brighter than the moon.
- (B) No star is more bright than the moon.
- (C) No star is brighter then the moon
- (D) No star is brighter than moon.

97. Ghani Khan is _ of Pashto.

- (A) John Keats
- (B) a John Keats
- (C) the John Keats
- (D) like John Keats

98. Identify the error in the sentence. The chef quickly prepared, delicious and it served a meal.

- (A) Punctuation
- (B) Style
- (C) Vocabulary
- (D) Word order

99. Which one of the following sentences contains an opinion?

- (A) The cake tastes delicious.
- (B) The heart pumps blood to the body.
- (C) The sun sets in the West.
- (D) The skin is the body's largest organ.

100. He had a heart attack and all attempts to _ him failed.

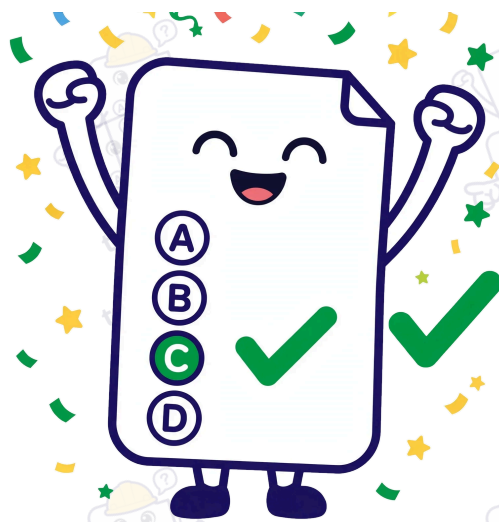
- (A) Renew
- (B) Resuscitate
- (C) Revise
- (D) Refurnish

Answer key

Tap any answer to open its full explanation on TestUstad.

Model Paper 1

1	D	2	A	3	B	4	A	5	A	6	A	7	C	8	D	9	B	10	C
11	B	12	A	13	D	14	B	15	C	16	D	17	D	18	B	19	D	20	D
21	D	22	B	23	B	24	A	25	B	26	C	27	C	28	A	29	B	30	B
31	A	32	A	33	C	34	C	35	B	36	B	37	A	38	C	39	D	40	B
41	D	42	B	43	A	44	C	45	C	46	B	47	A	48	A	49	C	50	A
51	B	52	C	53	B	54	A	55	D	56	A	57	B	58	B	59	B	60	D
61	B	62	B	63	B	64	A	65	B	66	C	67	C	68	A	69	D	70	C
71	E	72	D	73	B	74	D	75	B	76	D	77	B	78	C	79	C	80	A
81	A	82	B	83	A	84	D	85	D	86	B	87	A	88	C	89	A	90	A
91	E	92	D	93	C	94	A	95	C	96	A	97	C	98	D	99	A	100	B



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