JEE Main Practice Paper

Based on JEE Main Pattern

Generated: December 01, 2025 | Difficulty: Medium

Instructions:

- This paper contains 90 questions (30 per subject).
- Each subject has 20 MCQs and 10 Integer Type questions.
- MCQ: +4 for correct, -1 for incorrect.
- Integer: +4 for correct, 0 for incorrect.
- Time: 3 hours | Maximum Marks: 360

Physics

Section A: Multiple Choice Questions (MCQ)

Q1. If 50 Vernier divisions are equal to 49 main scale divisions of a travelling microscope and one smallest reading of main scale is 0.5 mm the Vernier constant of travelling microscope is:

(A) 0.1 mm

(B) 0.1 cm

(C) 0.01 cm

(D) 0.01 mm

Q2. The radius r , length and resistance R of a metal wire was measured in the laboratory as r= 0.35 $\pm$ 0.05 cm , R= 100 $\pm$ 10 ohm , = 15 $\pm$ 0.2 cm The percentage error in resistivity of the material of the wire is :

(A) 25.6%

(B) 39.9%

(C) 37.3%

(D) 35.6%

Q3. A galvanometer has a resistance of 50 and it allows maximum current of 5 mA . It can be converted into voltmeter to measure upto 100 V by connecting in series a resistor of resistance.

(A) 5975

(B) 20050

(C) 19950

(D) 19500

Q4. 10 divisions on the main scale of a Vernier calliper coincide with 11 divisions on the Vernier scale. If each division on the main scale is of 5 units, the least count of the instrument is :

(A) 1/2

(B) 10/11

(C) 50/11

(D) 5/11

Q5. A coil is placed perpendicular to a magnetic field of 5000 T . When the field is changed to 3000 T in 2 s , an induced emf of 22 V is produced in the coil. If the diameter of the coil is 0.02 m , then the number of turns in the coil is:

(A) 7

(B) 70

(C) 35

(D) 140

Q6. The pressure and volume of an ideal gas are related as PV 3 2 = K (Constant). The work done when the gas is taken from state AP 1 , V 1 , T 1 to state BP 2 , V 2 , T 2 is :

(A) 2 (P 1 V 1 - P 2 V 2)

(B) 2 (P 2 V 2 - P 1 V 1)

(C) 2$\sqrt{}$$P$ 1 V 1 -$\sqrt{}$$P$ 2 V 2

(D) 2P 2 $\sqrt{}$$V$ 2 -P 1 $\sqrt{}$$V$ 1

Q7. A clock has long second hand and minute hand respectively. In 30 minutes duration the tip of second hand will travel distance more than the tip of minute hand. The value of in meter is nearly (Take) :

(A) 140.5

(B) 118.9

(C) 139.4

(D) 220.0

Q8. A particle of charge - and mass m moves in a circle of radius r around an infinitely long line charge of linear density + . Then time period will be given as: (Consider as Coulomb's constant)

(A) T 2 = 4π 2 m 2 r 3

(B) T= 2$\pi r\sqrt{}$ m 2

(C) T= 1 2πr $\sqrt{}$ m 2

(D) T= 1 2π $\sqrt{}$ 2 m

Q9. The resistance per centimeter of a meter bridge wire is r , with resistance in left gap. Balancing length from left end is at 40 cm with 25 resistance in right gap. Now the wire is replaced by another wire of 2r resistance per centimeter. The new balancing length for same settings will be at

(A) 20 cm

(B) 10 cm

(C) 80 cm

(D) 40 cm

Q10. A nucleus at rest disintegrates into two smaller nuclei with their masses in the ratio of . After disintegration they will move :

(A) in the same direction with same speed.

(B) in opposite directions with the same speed.

(C) in opposite directions with speed in the ratio of respectively.

(D) in opposite directions with speed in the ratio of respectively.

Q11. Given below are two statements. One is labelled as Assertion (A) and the other is labelled as Reason (R). Assertion (A) : Knowing initial position and initial momentum is enough to determine the position and momentum at any time for a simple harmonic motion with a given angular frequency . Reason (R): The amplitude and phase can be expressed in terms of and . In the light of the above statements, choose the correct answer from the options given below :

(A) (A) is false but (R) is true

(B) (A) is true but (R) is false

(C) Both (A) and (R) are true but (R) is NOT the correct explanation of (A)

(D) Both and are true and is the correct explanation of

Q12. Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason(R) Assertion (A) : Work done by electric field on moving a positive charge on an equipotential surface is always zero. Reason (R) : Electric lines of forces are always perpendicular to equipotential surfaces. In the light of the above statements, choose the most appropriate answer from the options given below :

(A) Both (A) and (R) are correct but (R) is not the correct explanation of (A)

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

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

(D) Both (A) and (R) are correct and (R) is the correct explanation of (A)

Q13. The dimensional formula of angular impulse is :

(A) [M L – 2 T – 1]

(B) [M L 2 T – 2]

(C) [M L T – 1]

(D) [M L 2 T – 1]

Q14. A thin plano convex lens made of glass of refractive index 1.5 is immersed in a liquid of refractive index 1.2. When the plane side of the lens is silver coated for complete reflection, the lens immersed in the liquid 2025 (24 Jan Shift 1)

(A) 0.20 m

(B) 0.25 m

(C) 0.15 m

(D) 0.10 m

Q15. If the total energy transferred to a surface in time t is 6.48 x 10^5 J , then the magnitude of the total momentum delivered to this surface for complete absorption will be :

(A) 2.46 × 10^-3 kg m s^-1

(B) 2.16 × 10^-3 kg m s^-1

(C) 1.58 × 10^-3 kg m s^-1

(D) 4.32 × 10^-3 kg m s^-1

Q16. If R is the radius of the earth and the acceleration due to gravity on the surface of earth is g= π 2 m s^-2 , then the length of the second's pendulum at a height = 2 R from the surface of earth will be:

(A) 2/9 m

(B) 1/9 m

(C) 4/9 m

(D) 8/9 m

Q17. Escape velocity of a body from earth is 11.2 km s^-1 . If the radius of a planet be one-third the radius of earth and mass be one-sixth that of earth, the escape velocity from the plate is:

(A) 11.2 km s^-1

(B) 8.4 km s^-1

(C) 4.2 km s^-1

(D) 7.9 km s^-1

Q18. A light planet is revolving around a massive star in a circular orbit of radius R with a period of revolution T. If the force of attraction between planet and star is proportional to R -3 / 2 then choose the correct option :

(A) T 2 R 5 / 2

(B) T 2 R 7 / 2

(C) T 2 R 3 / 2

(D) T 2 R 3

Q19. If the percentage errors in measuring the length and the diameter of a wire are 0.1% each. The percentage error in measuring its resistance will be:

(A) 0.2%

(B) 0.3%

(C) 0.1%

(D) 0.144%

Q20. The minimum energy required by a hydrogen atom in ground state to emit radiation in Balmer series is nearly :

(A) 1.5 eV

(B) 13.6 eV

(C) 1.9 eV

(D) 12.1 eV

Section B: Integer Type Questions

Q21. A simple pendulum is placed at a place where its distance from the earth's surface is equal to the radius of the earth. If the length of the string is 4 m , then the time period of small oscillations will be _____ s . [take g= π 2 m s^-2]

Q22. A circular coil having 200 turns, area and carrying current is placed in a uniform magnetic field of 1 T. Initially the magnetic dipole moment was directed along . Amount of work, required to rotate the coil through from its initial orientation such that becomes perpendicular to , is _____ .

Q23. A time varying potential difference is applied between the plates of a parallel plate capacitor of capacitance . The dielectric constant of the medium between the capacitor plates is 1 . It produces an instantaneous displacement current of 0.25 mA in the intervening space between the capacitor plates, the magnitude of the rate of change of the potential difference will be _____ .

Q24. A particle is doing simple harmonic motion of amplitude and time period . The maximum velocity of the particle is _____ .

Q25. A nucleus has mass number A 1 and volume V 1 . Another nucleus has mass number A 2 and volume V 2 . If relation between mass number is A 2 = 4A 1 , then V 2 V 1 = _____.

Q26. The identical spheres each of mass 2 M are placed at the corners of a right angled triangle with mutually perpendicular sides equal to 4 m each. Taking point of intersection of these two sides as origin, the magnitude of position vector of the centre of mass of the system is $4\sqrt{2}\ x$, where the value of x is _____.

Q27. An elastic spring under tension of has a length . Its length is under tension . For its length , the value of tension will be_____ .

Q28. Two cars and are moving on a road in the same direction. Accleration of car increases linearly with time whereas car moves with a constant accleration. Both cars cross each other at time , for the first time. The maximum possible number of crossing(s) (including the crossing at is _____.

Q29. The refractive index of prism is and the ratio of the angle of minimum deviation to the angle of prism is one. The value of angle of prism is _____.

Q30. Resistance of a wire at and is found to be and respectively. The temperature in Kelvin scale is _____

Chemistry

Section A: Multiple Choice Questions (MCQ)

Q31. The incorrect statements regarding geometrical isomerism are : (A) Propene shows geometrical isomerism. (B) Trans isomer has identical atoms/groups on the opposite sides of the double bond. (C) Cis-but-2-ene has higher dipole moment than trans-but-2-ene. (D) 2-methylbut-2-ene shows two geometrical isomers. (E) Trans-isomer has lower melting point than cis isomer. Choose the correct answer from the options given below :

(A) (A) and (E) Only

(B) (A), (D) and (E) Only

(C) (B) and (C) Only

(D) (C), (D) and (E) Only

Q32. Given below are two statements about X-ray spectra of elements : Statement (I) : A plot of (frequency of -rays emitted) vs atomic mass is a straight line. Statement (II) : A plot of frequency of -rays emitted) vs atomic number is a straight line. In the light of the above statements, choose the correct answer from the options given below :

(A) Both Statement I and Statement II are true

(B) Statement I is false but Statement II is true

(C) Both Statement I and Statement II are false

(D) Statement I is true but Statement II is false

Q33. Match List - I with List - II.

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

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

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

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

Q34. Given below are two statements : Statement I : and both exhibit hybridisation. Statement II : Both and exhibit hybridisation. In the light of the above statements, choose the correct answer from the options given below :

(A) Statement I is true but Statement II is false

(B) Statement I is false but Statement II is true

(C) Both Statement I and Statement II are true

(D) Both Statement I and Statement II are false

Q35. Given below are two statements: Statement (I) : Aminobenzene and aniline are same organic compounds. Statement (II) : Aminobenzene and aniline are different organic compounds. In the light of the above statements, choose the most appropriate answer from the options given below:

(A) Both Statement I and Statement II are correct

(B) Statement I is correct but Statement II is incorrect

(C) Statement I is incorrect but Statement II is correct

(D) Both Statement I and Statement II are incorrect

Q36. Match List I with List II LIST – I (Complex ion) LIST – II (Electronic Configuration A. Cr 2 6 3 + I. t 2 g 2 e g0 B. e 2 6 3 + II. t 2 g 3 e g0 C. N 2 6 2 + III. t 2 g 3 e g2 D. V 2 6 3 + IV. t 2 g 6 e g2 Choose the correct answer from the options given below :

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

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

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

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

Q37. Identify correct statements from below: A. The chromate ion is square planar.

(A) B, C, D only

(B) A, D, E only

(C) A, B, C only

(D) B, D, E only

Q38. The number of unpaired d-electrons in is

(A) 2

(B) 1

(C) 0

(D) 4

Q39. Two moles of a monoatomic gas is mixed with six moles of a diatomic gas. The molar specific heat of the mixture at constant volume is :

(A) 9/4 R

(B) 7/4 R

(C) 3/2 R

(D) 5/2 R

Q40. A sample of CaCO 3 and MgCO 3 weighed 2.21 g is ignited to constant weight of 1.152 g . The composition of the mixture is: (Given molar mass in g mol -1 , CaCO 3 : 100, MgCO 3 : 84)

(A) 1.187 g CaC 3 + 1.023 g MgC 3

(B) 1.023 g CaC 3 + 1.023 g MgC 3

(C) 1.187 g CaC 3 + 1.187 g MgC 3

(D) 1.023 g CaC 3 + 1.187 g MgC 3

Q41. Which of the following gives a positive test with ninhydrin?

(A) Starch

(B) Egg albumin

(C) Polyvinyl chloride

(D) Cellulose

Q42. Given below are two statements : one is labelled as Assertion (A) and the other is labelled as Reason (R). Assertion (A): reaction of occurs more readily than the reaction of . Reason (R) : The partially bonded unhybridized p-orbital that develops in the trigonal bipyramidal transition state is stabilized by conjugation with the phenyl ring. In the light of the above statements, choose the most appropriate answer from the options given below :

(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 but (R) is not the correct explanation of (A)

(D) Both (A) and (R) are correct and (R) is the correct explanation of

Q43. Match the Compounds (List - I) with the appropriate Catalyst/Reagents (List - II) for their reduction into corresponding amines. Choose the correct answer from the options given below :

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

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

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

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

Q44. The equilibrium is shifted to the right in :

(A) an acidic medium

(B) a basic medium

(C) a neutral medium

(D) a weakly acidic medium

Q45. An amount of ice of mass and temperature is transformed to vapour of temperature by applying heat. The total amount of work required for this conversion is, (Take, specific heat of ice , specific heat of water , specific heat of steam , Latent heat of ice and Latent heat of steam)

(A) 3043 J

(B) 3024 J

(C) 3003 J

(D) 3022 J

Q46. Number of complexes from the following with even number of unpaired " " electrons is [Given atomic numbers :]

(A) 2

(B) 1

(C) 4

(D) 5

Q47. The emf of cell Tl is at . It could be increased by :

(A) decreasing concentration of both and ions

(B) increasing concentration of ions

(C) increasing concentration of ions

(D) increasing concentration of both and ions

Q48. Which of the following acids is a vitamin?

(A) Adipic acid

(B) Ascorbic acid

(C) Saccharic acid

(D) Aspartic acid

Q49. Match List - I with List - II. Choose the correct answer from the options given below :

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

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

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

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

Q50. Solubility of calcium phosphate (molecular mass, M) in water is W g per 100 mL at 25°C . Its solubility product at 25°C will be approximately.

(A) 10 7 W M 3

(B) 10 7 W M 5

(C) 10 3 W M 5

(D) 10 5 W M 5

Section B: Integer Type Questions

Q51. r = kA for a reaction, 50% of A is decomposed in 120 minutes. The time taken for 90% decomposition of A is _____ minutes.

Q52. was taken in a 1 L reaction vessel and allowed to undergo the following reaction at 500 K The total pressure at equilibrium was found to be 18.65 bar. Then, _____ [nearest integer] Assume to behave ideally under these conditions. Given: bar

Q53. Total number of aromatic compounds among the following compounds is _____.

Q54. Number of compounds from the following with zero dipole moment is _____

Q55. Vanillin compound obtained from vanilla beans, has total sum of oxygen atoms and electrons is _____

Q56. The number of neutrons present in the more abundant isotope of boron is ' '. Amorphous boron upon heating with air forms a product, in which the oxidation state of boron is ' '. The value of is _____

Q57. If the above equation is balanced with integer coefficients, the value of is _____.

Q58. Consider the following reaction, the rate expression of which is given below The reaction is initiated by taking concentration of and each. If the rate constant is , then the time taken for to become is _____ sec. (nearest integer)

Q59. The number of the correct reaction(s) among the following is _____

Q60. For hydrogen atom, energy of an electron in first excited state is . of the same electron of hydrogen atom is . Value of is _____ . (Nearest integer)

Mathematics

Section A: Multiple Choice Questions (MCQ)

Q61. Let $fx = 2x\ 2 + 5x\text{-}\ 3$, xR . If m and n denote the number of points where f is not continuous and not differentiable respectively, then $m+\ n$ is equal to:

(A) 5

(B) 2

(C) 0

(D) 3

Q62. Let gx be a linear function and $fx = $ gx, $x \leq 0\ 1 + x\ 2 + x\ 1\ x$, $x > 0$, is continuous at $x = 0$. If f ' $1 = f$-1 , then the value of g3 is

(A) $1\ 3 \log e\ 4\ 9e\ 1/3$

(B) $1\ 3 \log e\ 4\ 9 + 1$

(C) $\log e\ 4\ 9$ -1

(D) $\log e\ 4\ 9e\ 1/3$

Q63. Consider the line passing through the points and . The distance of the point from the line along the line is equal to

(A) 6

(B) 5

(C) 4

(D) 3

Q64. Let L 1 : $\rightarrow r=$ ^ - ^ + 2 ^ + ^ - ^ + 2 ^ , R , L 2 : $\rightarrow r=$ ^ - ^ + 3 ^ + ^ + ^ , R and L 3 : $\rightarrow r=$ (^ + m ^ + n ^), R be three lines such that L 1 is perpendicular to L 2 and L 3 is perpendicular to both L 1 and L 2 . Then the point which lies on L 3 is

(A) (- 1, 7, 4)

(B) (- 1, - 7, 4)

(C) (1, 7, - 4)

(D) (1, - 7, 4)

Q65. The value of for which the integral , satisfies is

(A) 14

(B) 8

(C) 10

(D) 7

Q66. Let P be a point on the hyperbola H: x 2 9 - y 2 4 = 1 , in the first quadrant such that the area of triangle formed by P and the two foci of H is 2$\sqrt{}$13 . Then, the square of the distance of P from the origin is

(A) 18

(B) 26

(C) 22

(D) 20

Q67. The remainder, when is divided by 23 , is equal to :

(A) 6

(B) 17

(C) 9

(D) 14

Q68. Suppose that the number of terms in an A.P. is . If the sum of all odd terms of the A.P. is 40 , the sum of all even terms is 55 and the last term of the A.P. exceeds the first term by 27, then k is equal to :

(A) 6

(B) 5

(C) 8

(D) 4

Q69. Let . Define a relation on as : Statement I : is an equivalence relation. Statement II : For some , the set represents a line parallel to . In the light of the above statements, choose the correct answer from the options given below :

(A) Both Statement I and Statement II are false

(B) Statement I is true but Statement II is false

(C) Both Statement I and Statement II are true

(D) Statement I is false but Statement II is true

Q70. Let for some function and . Then is equal to

(A) 1

(B) 3

(C) 6

(D) 2

Q71. A ray of light coming from the point gets reflected from the point on the -axis and then passes through the point . If the point is such that PQRS is a parallelogram, then is equal to :

(A) 70

(B) 80

(C) 60

(D) 90

Q72. Let and . Then is equal to :

(A) 1

(B) 6

(C) 4

(D) 2

Q73. For $0 < c < b < a$, let $(a+ b- 2c) x^2 + (b+ c- 2a) x+ (c+ a- 2b) = 0$ and $\neq 1$ be one of its root. Then, among the two statements (I) If -1, 0 , then b cannot be the geometric mean of a and c . (II) If 0, 1 , then b may be the geometric mean of a and c .

(A) Both (I) and (II) are true

(B) Neither (I) nor (II) is true

(C) Only (II) is true

(D) Only (I) is true

Q74. Consider the function defined by . Consider the statements (I) The curve intersects the -axis exactly at one point (II) The curve intersects the -axis at Then

(A) Only (II) is correct

(B) Both (I) and (II) are incorrect

(C) Only (I) is correct

(D) Both (I) and (II) are correct

Q75. Two marbles are drawn in succession from a box containing 10 red, 30 white, 20 blue and 15 orange marbles, with replacement being made after each drawing. Then the probability, that first drawn marble is red and second drawn marble is white, is

(A) 2/25

(B) 4/25

(C) 2/3

(D) 4/75

Q76. Let the area of the region enclosed by the curves and be . Then is equal to

(A) 172

(B) 162

(C) 154

(D) 184

Q77. Let the area enclosed between the curves and be . If are integers, then the value of equals.

(A) 27

(B) 33

(C) 15

(D) 18

Q78. Let f, g: 0, $\infty \to$R be two functions defined by $fx =$ -x x t-t 2 e -t 2 dt and g$x =$ 0 x 2 t 1 2 e -t 2 dt . Then the value of $9f\sqrt{}\log e\ 9 +$ g$\sqrt{}\log e\ 9$ is equal to

(A) 6

(B) 9

(C) 8

(D) 10

Q79. Let R be the interior region between the lines 3 x - y + 1 = 0 and x + 2 y - 5 = 0 containing the origin. The set of all values of a , for which the points a 2 , a + 1 lie in R , is :

(A) (- 3, - 1) - 1/3 , 1

(B) (- 3, 0) 1/3 , 1

(C) (- 3, 0) 2/3 , 1

(D) (- 3, - 1) 1/3 , 1

Q80. Let and be a matrix such that . If and , then is equal to

(A) 16

(B) 2

(C) 8

(D) 10

Section B: Integer Type Questions

Q81. Let be the solution of the differential equation , . If and are coprime numbers, then is equal to _ _ _ _ _ _ _ _ _ _.

Q82. The number of real solutions of the equation $x\left(x^2+3|x|+5|x-1|+6|x-2|\right)=0$ is

Q83. If and are the roots of the quadratic equation , then is equal to_ _ _ _ _ _ _ _ _ _

Q84. If , then is equal to _ _ _ _ _ _

Q85. If the coefficient of x 30 in the expansion of 1 + 1 x 6 1 + x 27 1 -x 38 ; $x \neq 0$ is , then equals _____.

Q86. Let be the projection vector of , on the vector . If , then the area of the parallelogram formed by the vectors and is _____

Q87. Let and , where is the origin. If is the parallelogram with adjacent sides and , then is equal to _____

Q88. Let be a thrice differentiable function such that and . Then, the minimum number of zeros of is _____

Q89. Consider a circle $x-$ 2 + $y-$ 2 = 50 , where , > 0 . If the circle touches the line $y+$ $x=$ 0 at the point P , whose distance from the origin is $4\sqrt{2}$, then (+) 2 is equal to _____.

Q90. In a triangle and . If , where , then is equal to_____

Answer Key

Physics

Section A (MCQ):

Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
(4)	(2)	(3)	(4)	(2)	(1)	(3)	(2)	(4)	(4)
Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20
(4)	(4)	(4)	(4)	(2)	(2)	(4)	(1)	(2)	(4)

Section B (Integer):

Q21	Q22	Q23	Q24	Q25	Q26	Q27	Q28	Q29	Q30
8	5	100	12	4	3	5	3	60	748

Chemistry

Section A (MCQ):

Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q40
(2)	(3)	(4)	(4)	(2)	(4)	(4)	(3)	(1)	(1)
Q41	Q42	Q43	Q44	Q45	Q46	Q47	Q48	Q49	Q50
(2)	(4)	(4)	(2)	(1)	(1)	(2)	(2)	(1)	(2)

Section B (Integer):

Q51	Q52	Q53	Q54	Q55	Q56	Q57	Q58	Q59	Q60
399	962	1	6	11	2	8	50	1	34

Mathematics

Section A (MCQ):

Q61	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q70
(4)	(4)	(4)	(1)	(4)	(3)	(4)	(2)	(2)	(1)
Q71	Q72	Q73	Q74	Q75	Q76	Q77	Q78	Q79	Q80
(1)	(4)	(1)	(4)	(4)	(2)	(2)	(3)	(2)	(4)

Section B (Integer):

Q81	Q82	Q83	Q84	Q85	Q86	Q87	Q88	Q89	Q90
97	1	6	465	678	16	4	5	100	39