

I - QUEST'24



SAMPLE QUESTION PAPER



I-Quest '24 is a talent search exam for Foundation and Non-Foundation students of classes V to VIII among the Velammal Nexus Schools. It exposes the students for competitive exam based on 21st century skills. This exam is scheduled in the month of November.

• This sample question paper will give a clarity on topology of the exam.

• Solving the sample question paper will give hands on experience and increase the confidence of the students to face the final exam.

- Students can seek parents help to solve the questions.
- Similar questions will reflect in the final paper.
- Answer key will be displayed in the class.

• Completed question paper to be submitted to the class teacher after school reopening.

• Prepare well for I-Quest '24 exam and grab attractive prizes and cash awards.

GENERAL INSTRUCTIONS FOR THE FINAL EXAM

(I-QUEST '24)

Mode of I-QUEST question paper	Candidates will be given an OMR sheet to mark the answers with a black or blue ballpoint pen
Duration of the exam	2 hours and 30 minutes
Question Type	Multiple choice questions
Total number of questions	The question paper consist of 100 questions and it is divided into four sections A,B,C & D (Maths, Physics, Chemistry & Reasoning) Candidates will have to answer all the questions.
Total marks	100 marks
Marking scheme	1 mark will be awarded for each correct answer 0 mark for each wrong answer or unattempted question

MATHEMATICS

 There are three numbers. First number is the successor of the second number. The second number is the 3rd multiple of the third number and if the third number is the 8th multiple of 755. Find the first number.

- 3) 18049 4) 18121
- 2. Match the following:



- 1) i b; iii c; ii a; iv d 2) i c; ii a; iii d; iv b 3) i c; ii a; iii b; iv d 4) i c; ii b; iii d; iv а
- 3. Medicine is packed in boxes, each weighing 5 kg 500 g. How many such boxes can be loaded in a van which cannot carry beyond 900 kg?

1) 177 2) 169 3) 175 4) 163

Statement – I : As per the place value system, multiplication is performed from left to right i.e. Highest place value to lowest place value.

4.

Statement - II : As per the place value system, division is performed from left to right i.e. Highest place value to lowest place value

- 1) Both statements are true
- 2) Both statements are false
- 3) Only statement I is true
- 4) Only statement II is true

Consider the following statements and choose which is incorrect?

- 1) The sum of two distinct whole numbers is always a natural number
- 2) The product of two distinct whole numbers is always a natural number

3) Whole number x does not satisfy the relation x ÷ x = 1 is least whole number

4) The whole number which is a multiple of every number is 0

The number of line segments in the shown figure is



7. How many diagonals are there in the given figure ?





SPACE FOR ROUGH WORK

6.

I-Quest Std_VI Model Paper

- 8. The difference in the place values of 8 between the greatest and the smallest 4-digit numbers formed by using the digits 3, 8, 0, 5 each only once is

 8998
 9992
 9992
- 9. The two numbers nearest to 10000 which are exactly divisible by each of 2, 3, 4, 5, 6 and 7, are ___.

1) 9660, 10080 2) 9320, 10080

- 3) 9660, 10060 4) 10340,10080
- 10. Three boys steps off together from the same spot. Their steps measure
 63 cm, 70 cm & 77 cm, respectively. What is the minimum distance each should cover so that all can cover the distance in complete steps?
 1) 6930 cm 2) 6000 cm
 - 3) 7000 cm 4) 6520 cm
- 11. Find the value of a + b + c, if 373a is divisible by 9, 473b is divisible by 11 and 371c is divisible by 6.
 1) 7 2) 6 3) 0 4) 9

12.
$$1 + \frac{2}{1 + \frac{3}{1 + \frac{4}{r}}} = _$$

1)

$$\frac{7}{4}$$
 2) $\frac{4}{7}$ 3) $\frac{7}{5}$ 4)

13. It was estimated that because of people switching to Metro trains, about 33000 tonnes of CNG, 3300 tonnes of diesel and 21000 tonnes of petrol was saved by the end of year 2007. Find the fraction of the quantity of diesel saved to the quantity of CNG saved.

1)
$$\frac{4}{10}$$
 2) $\frac{3}{10}$ 3) $\frac{2}{10}$ 4) $\frac{1}{10}$

- 14. In a five digit number, digit at ten's place is 4, digit at unit's place is one fourth of ten's place digit, digit at hundred's place is 0, digit at thousand's place is 5 times of the digit at unit's place and ten thousand's place digit is double the digit at ten's place. The number is

 85041
 85401
- 15. Product of the least multiple and highest factor of number 15 is _____.
 1) 60 2) 30
 3) 150 4) 225
- 16. Ayush, Satyam and Mohak bought
 8.5 litres, 7.25 litres and 9.4 litres
 milk respectively from a milk booth. If
 there was 30 litres of Milk in booth,
 then the quantity of milk left in the
 milk booth is
 - 1) 4.850 litres 2) 4.508 litres
 - 3) 5.408 litres 4) 8.450 litres
- 17. Total number of odd factors of 96 is1) 202) 123) 24) 11
- The HCF of the denominator and the numerator of a fraction which is in its lowest form is
 - 1) 1
 - 2) Always an even number
 - 3) 0
 - 4) Can't be determined

SPACE FOR ROUGH WORK

 $\frac{3}{7}$

19.	In the below figure, if centres of all						
	identical circles are joined by						
	horizontal and vertical lines, then find						
	the number of squares that can be						
	formed.						
	1) 6	24.					
	2) 8						
	3) 7						
	4) 10						
20.	Sum of LCM and HCF of the even	25.					
	prime and greatest 1-digit odd						
	composite number is						
	1) 9 2) 19 3) 36 4) 1						
21.	State 'T' for true and 'F' for false.						
	(i) Since $5 > 3$, therefore $-5 > -3$.						
	(ii) The difference between an integer						
	and its negative is always even.						
	(iii) The sum of three different integers						
	can never be zero.						
	(iv) All whole numbers are integers.						
	i ii iii iv						
	2) F F T T	0.0					
	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	28.					
	T) 1 1 1						
22.	Write a pair of fractions whose sum is						
	7						
	$\frac{1}{11}$ and difference is $\frac{1}{11}$						
	1) $\frac{7}{1}$, $\frac{2}{1}$ 2) $\frac{9}{1}$, $\frac{2}{1}$						
	(11, 11) $(11, 11)$ $(11, 11)$						
	3) $\frac{1}{11}, \frac{1}{11}$ 4) $\frac{1}{11}, \frac{1}{11}$						
		I					
	SPACE FOR R	OUGH					

The weight of a basketball is about 700000 mg. It is 1) Less than 700 g 2) Greater than 700 g 3) Equal to 700 g 4) None of these The value of $3\frac{1}{12} + [1\frac{3}{4} + \{2\frac{1}{2} - (1\frac{1}{2} - \frac{1}{3})\}]$ is 1) $6\frac{1}{6}$ 2) 5 3) 4 4) 3 Write the largest four digit decimal number less than lusing the digits 1, 5, 3 and 8 once. 1) 1.358 2) 8.531 3) 0.1358 4) 0.8531 A rectangle is divided into certain number of equal parts. If 16 of the parts so formed represent the fraction $\frac{1}{4}$, find the number of parts in which the rectangle has been divided. 2) 64 1) 96 3) 32 4) 48 Write the measure of smaller angle formed by the hour and the minute hands of a clock at 7 'O' clock. 2) 200° 3) 150° 4) 135° 1) 210° The faces of two dice are marked +1, +2, +3, +4, +5, +6 and -1, -2, -3, -4, -5, -6 respectively. Two players throw the pair of dice alternately and record the sum of the numbers that turn up each time and keep adding their scores separately. Find the possible maximum and minimum score in a single throw. 1) 3 and 6 2) 6 and 0 3) 5 and 0 4) 5 and -5

H WORK ROUG

- 29. Find the minimum number of straight lines required to make the below given figure?
 - 1) 9

3) 15

35.

30. If the sum of two angles is greater

than 180°, then which of the following

2) 11

4) 48

is not possible for the two angles?

- 1) One obtuse angle and one right angle
- 2) One reflex angle and one acute angle
- 3) Two obtuse angles
- 4) Two right angles

PHYSICS

- 31. Image of the Sun in a pinhole camera is
 - 1) circular
 - 2) long
 - 3) sometimes long, sometime circular 4) none of these
- 32. Among the following sets, the best
 - insulator is/are
 - 1) rubber, glass, plastics, ebonite, cotton, copper
 - 2) silver, copper, gold, iron
 - 3) bakelite, dry air, paper, ebonite, aluminum
 - 4) plastics, ebonite, paper, cotton, bakelite, dry air, rubber
- 33. A student stands 3 m in front of a plane mirror, how far away would he see himself in the mirror?
 - 1) 1.5 m 2) 3 m 3) 6 m 4) 7.5 m

34. Find the number of images formed by the given figures (i) and (ii) respectively.



3) a, b only 4) a, c only

38. A girl is 4 m away from the plane 41.mirror. If she moves a few steps closer to the mirror, what will happen to the size of the image in mirror ?



- 1) The size of image will decrease
- 2) The size of image will be the same
- 3) The size of image will increase
- 4) cannot say
- 39. Choose the statement which is not correct in the case of an electric fuse.
 - 1) Fuses are inserted in electric circuits of all the buildings.
 - 2) There is a maximum limit on the current which can safely flow through the electric circuit.
 - If the proper fuse is inserted in a circuit, it will blow off if the current exceeds the safe limit.
 - 4) There is a minimum limit on the current which can safely flow in the electric circuit.
- 40. **Statement-I:** Shadow depends on the position of the source.

Statement-II: Shadow depends on the size of the source of light

- 1) Both Statements are true
- 2) Both Statements are false
- 3) Statement-I is true and Statement-II is false
- 4) Statement-I is false and Statement-II is true

- Moon, the natural satellite of earth forms eclipse due to sun source forming umbra of moon on earth. The artificial satellite of earth is not forming any eclipse because _____
 - Size of umbra portion of artificial satellite is negligible
 - 2) They do not form shadows to sun
 - 3) They lie on other side of sun
 - 4) They form shadow on moon
- 42. Tube lights are preferred to bulbs mainly because
 - 1) bulbs give more light
 - 2) bulbs are cheaper
 - 3) bulbs get fused easily/frequently
 - 4) bulbs produce shadows
- 43. A battery can supply a charge of 25×10^4 C. If the current is drawn from the battery at the rate of 2.5 A, calculate the time in which battery will get discharged ?
 - 1) 10^5 s 2) 10^6 s 3) 10^4 s 4) 10^7 s
- 44. **Statement I :** Filament of the bulb is made up of conductor.

Statement – II : Tungsten is a good conductor of electricity.

- 1) Both Statements are true
- 2) Both Statements are false
- 3) Statement-I is true and Statement-II is false
- Statement-I is false and Statement-II is true

- 45. Among the following, a cold source of light is
 - 1) Tube light 2) Firefly (Jugnu)
 - 3) The sun 4) Electric bulb
- 46. Which of the following is not based on the heating effect of electric current?
 - 1) Electric heater
 - 2) Electric bulb (with filament)
 - 3) Electric iron
 - 4) Microwave
- 47. Observe the diagram given below. What is proved from the above arrangement?



- 1) Light can be refracted.
- 2) Light can be reflected.
- 3) Light can be blocked.
- 4) Light travels faster than sound
- 48. When a plastic comb rubbed on hair is brought near bits of paper, it attracts them because
 - 1) The comb and the paper bits get oppositely charged.
 - 2) The comb and the paper bits get similarly charged.
 - 3) The paper bits are very light
 - 4) The paper bits are heavy

- 49. The sub-atomic particle which has no electric charge _____
 - 1) Proton

3) Electron 4) All of these

2) Neutron

50. A torch is shone onto a star-shaped card which forms a shadow on the screen behind the card. What will happen to the shadow if the torch is moved away from the card?



- 1) It decreases in size.
- 2) It increases in size.
- 3) It first becomes smaller and then again becomes larger.
- 4) It changes its shape.
- 51. A body can be charged by
 - 1) friction 2) conduction
 - 3) induction 4) all the above
- 52. Among the following incorrect statement about image formed by plane mirror
 - 1) The image is latterly inverted
 - 2) The image is virtual. It can be received on a screen
 - 3) The image is erect
 - 4) None of these
- 53. The diagram given below shows the positions of four students P, Q, R and S observing the flame of a candle through the pipes. Which student can see the candle flame?



- 54. Which of the following objects does NOT 59. allow light to pass through it?
 - 1) A mirror
 - 2) A glass bottle
 - 3) A piece of tracing paper
 - 4) A piece of clear plastic paper

55. Match the following :

Column - A	Column – B
a. Transparent objects	p) Dark patch
b. Translucent objects	q) Table and chair
c. Opaque objects	r) Butter paper and wax paper
d. Shadow	s) Water and glass

1) a - p, b - r, c - q, d - s 2) a - q, b - s, c - r, d - p 3) a - s. b - r, c - q, d - p 4) a - s, b - q, c - p, d - r

- 56. Among the following, the property of light that can be used to explain the phenomenon of shadow formation is
 - 1) light travels in a straight line
 - 2) light travels at a high speed
 - 3) light does not pass through opaque objects
 - 4) both 1 & 3
- 57. When a beam of light is incident on a plane mirror, it is found that a real image is formed. The incident light beam must be
 - 1) parallel 2) convergent
 - 3) divergent 4) none of the above
- 58. The average distance between the Earth and the Sun is called
 - 1) light year 2) astronomical unit
 - 3) fermi 4) parsec

- While measuring length using a metre scale, the position of the eye _____
 - should be vertically above the
 mark of the scale
 - should be vertically above the point where the measurement is to be taken
 - should be a little away from the point where the measurement is to be taken
 - does not matter as long as the scale is accurate
- 60. Below figure shows the image formed by pinhole camera



By how many methods can this image be made smaller?

- By increasing the distance between object and the hole.
- By decreasing the distance between object and the hole.
- 3) By increasing the length of pin hole camera
- 4) All of these

CHEMISTRY

61. Why are most of the Balloons, Tyres and Footballs made of rubber?

- 1) It is naturally available
- 2) It is cheap
- 3) It is an electrical insulator
- 4) It is soft and flexible

- 62. What is the criteria on which the process of classification of substances based on?
 - 1) Similarities
 - 2) Differences
 - 3) Interrelationships
 - 4) All the above
- 63. If opacity is the distinct feature of wood, then what is glass known for in the same way?
 - 1) Its transparency
 - 2) Its magnetic nature
 - 3) Its conductivity to heat
 - 4) Its lustrous nature
- 64. Which of the following is made of only one material ?



- 65. Which of the following statements are correct?
 - a. Larger solid particles can be separated from smaller ones by filtration.
 - b. Cream can be separated from milk by churning.
 - c. A mixture of mud and water can be separated by loading,
 - sedimentation and decantation
 - d. Grains can be separated from stalks by threshing.
 - 1) a and b only 2) b and d only
 - 3) a, b and c only (4) b, c and d only

66. Equal volumes of oil and water are taken in two glasses and weighed. What is the likely outcome?



- 1) Oil weighs more
- 2) Water weighs more
- 3) Both oil and water weigh the same
- 4) Water weighs less when heated
- 67. Nisha poured a mixture of salt, iron filings, sand and flour into a container. Which of the following substances can be separated from the mixture by using a magnet?
 - 1) Salt
 - 2) Flour
 - 3) Sand
 - 4) Iron filings
- 68. Which one of the following statements is true?

Statement - I: Air is a transparent material

Statement - II: Wood is an opaque material

- 1) Statement I only
- 2) Statement II only
- 3) Neither statement I nor statement - II
- 4) Both statements
- 69. Which one of the following methods is used to separate the constituents of a mixture whose particles are of different sizes?
 - 1) Loading 2) Evaporation
 - 3) Sieving 4) Distillation

- 70. The sky looks clearer and brighter after the rain due to loading by rain drops. Which of the following is similar to the process mentioned above?
 - 1) Separation of butter from curd
 - 2) Sprinkling water on a dusty street before sweeping
 - 3) Separation of salt from sea water
 - 4) Separation of grain seeds from their stalks
- 71. What type of a substance is steel ?
 - 1) a solid liquid heterogeneous mixture
 - 2) A solid solid heterogeneous mixture
 - 3) A solid solid homogeneous mixture
 - 4) A pure substance
- 72. Select an incorrect reason for separating components of a mixture.
 - 1) To separate two or more different but useful components
 - 2) To remove undesirable and useless components
 - 3) To obtain pure sample of a substance
 - 4) To remove pure or harmless components
- 73. Which of the following does not represent a characteristic of pure substance?
 - It has a uniform texture throughout (homogeneous)
 - 2) It has a fixed boiling point or

melting point

- 3) It is made up of different types of particles
- 4) It can be an element or a compound

- 74. Which of the following materials is used to make an electric iron?
 (i) Plastic (ii) Metal (iii) Glass
 1) Only (i)
 2) Only (i) and (ii)
 3) Only (ii) and (iii)
 4) (i), (ii) and (iii)
- 75. How do you separate salt from salt water ?
 1) Evaporation 2) Filtration
 3) Condensation 4) Sedimentation
- 76. When a solute dissolves in a solvent and disappears it is called a1) Mixture 2) Solution
 - 3) Solvent 4) None of the above
- 77. The process of making mud particles heavy with alum
 - 1) Decantation 2) Loading
 - 3) Filtration 4) Condensation
- 78. Shobha took two liquids (coconut oil and water) in a separating funnel as shown in the figure.



What would she observe after some time?

- 1) Layer 'X' is coconut oil, 'Y' is water and two distinct layers are formed.
- 2) Layer 'X' is water, 'Y' is coconut oil and two distinct layers are formed.
- 3) Layers 'X' and 'Y' are miscible to some extent, hence do not form distinct layers.
- 4) Coconut oil is first collected in the beaker.

(i) A gaseous mixture

solid-liquid mixture

- (v) A gas-liquid mixture
- (iv) A heterogeneous solid-liquid mixture
- Q. Glucose solution (ii) A solid-gas mixture R. Fizzy drink (iii) A homogeneous
- select the correct option from the given codes. Column-I Column-II
- sieving
- separation
- 2) Winnowing followed by magnetic
- 3) Magnetic separation followed by

- 4) A flexible object Out of our total body weight, about

84.

two- third is made up of water. It is important to have a regular intake of water. Why?

Nishant puts an object in front of a

sharp shadow was immediately

place in front of light?

1) A transparent object

2) A translucent object

3) An opaque object

formed. What type of object did he

beam of light and noticed that a dark

- 1) Water has lots of vitamins and proteins
- 2) Water can dissolve a lot of substances

79.

80.

- 3) Water conducts heat very fast and thereby maintains the body temperature
- 4) Water helps in maintaining the electrolytic balance in our body
- 81. 1 kg of iron occupies less space compared to 1 kg of sponge. Why?
 - 1) Iron has less density than sponge
 - 2) Iron and sponge have equal densities
 - 3) Iron has more density than sponge
 - 4) Weight of iron per unit volume is less than that of sponge
- 82. Clinical thermometers are made of glass.
 - Identify the characteristic(s)
 - considered for the selection.
 - (i) It is a bad conductor of heat
 - (ii) It is transparent
 - (iii) It is strong
 - 1) Only (i) and (ii) 2) Only (ii) and (iii)
 - 3) Only (i) and (iii) 4) (i), (ii) and (iii)

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83. Properties of three substances X, Y and Z are given below :

X : Heavy and non-magnetic

- Y : Light and non-magnetic
- Z : Magnetic

If X, Y and Z are of same size and colour then, which of the following can be used to separate these

particles from their mixture?

- 1) Handpicking followed by filtration

Match column I with column II and

4) Sublimation followed by distillation

I-Quest Std_VI Model Paper

S. Smoke

T. Air

SPACE FOR ROUGH WORK

P. Chalk-water mixture

1) P - iii, Q - iv, R - v, S - i, T - ii 2) P - v, Q - iii, R - iv, S - ii, T - i 3) P - ii, Q - i, R - iv, S - v, T - iii

4) P - iv, Q - iii, R - v, S - ii, T - i

- 85. Which one of the following is correct for the term 'mass' ?
 - 1) Mass is the measurement of amount of matter present in an object
 - Mass is the measurement of amount of space occupied by an object
 - 3) Mass is the measurement of amount of density of an object4) Both 1 and 2
- 86. Which of the following statements is incorrect?
 - 1) Some materials appear shiny, while others appear dull.
 - 2) Some materials are rough, while others are smooth.
 - 3) Certain materials are hard, while others are soft.
 - 4) Some stones are transparent, while some glasses are opaque.
- 87. Which of the following materials is/are translucent?
 - 1) Stained glass 2) Mirror
 - 3) Wall 4) Cloth
- 88. Which process is used to separate a miscible liquid solution?1) Sedimentation 2) Distillation
 - 1) Sedimentation 2) Distillation
 - 3) Decantation 4) All of these
- 89. Study the table given below. Based on the below information, identify X & Y.

Mixtur	e I	Wanted	Unwanted			
Wheat flo	our	Flour	Х			
Y	Gr	ain seeds	Stalks			
X			Y			
1) Husk	sk Cut paddy					

- 2) Wheat Husk3) Wheat Sawdust
- 4) Husk Sand

- 90. A science teacher labelled three glass slides as P, Q and R. She painted slide Q with light blue colour, slide R with black colour and slide P was left as such. Then she asked students to put the slide on a white paper having (X) mark on it. Which slide will be able to see by the students the mark partially ?
 - 1) In slide P as it is translucent
 - 2) In slide Q as it is translucent
 - 3) In slide R as it is opaque
 - In all the slides as paint does not change the nature of glass

REASONING

- 91. Complete the series :

 2, 9, ?, 65, 126
 28
 28
 399
 40108

 92. Fill the blank spaces in the series:

 A BBC AAB CCA BBCC
 ABBC 2) ABBA
 - 3) CABA 4) ACBA
- 93. Choose the odd one out:
 - 1) Kiwi 2) Ostrich
 - 3) Eagle 4) Penguin
- 94. Choose the figure which is different from the others.



95. Ankit travelled westwards 5 km, turned left and travelled 3 km, turned right and travelled 9 km, he then travelled North 3 km. How far he is from the starting point?

> 1) 5 km 2) 3 km 3) 6 km 4) 14 km

96. If 'lead' is called 'stick', 'stick' is called 'nib', 'nib' is called 'needle', 'needle' is called 'rope' and 'rope' is called 'thread', then what will be fitted in a fountain pen to write with it?

1) stick 2) lead

3) needle 4) nib

97. Which of the following diagram indicates the relation among women, mothers and parents?



- 98. In a code language, if SUGAR is coded as ZNMDB and TEA is coded as FLD, then how would you code GRATE in the same code language?
 - 1) BNDFL 2) MBDFL
 - 3) LDZMN 4) FLDZB
- 99. Select the correct alternative to replace the '?'81:3:27:?:2:125
 - 1) 225 : 25 2) 5 : 25
 - 3) 150 : 15 4) 625 : 5

100. Select a suitable figure from theAnswer Figures that would replace thequestion mark (?)Problem figure Answer figure





M	ATHEMATICS	CS PHYSICS		CHEMISTRY		(REASONING		
1		31	(1) (2) (3) (4)	61	(1) (2) (3) (4)		01	(1) (2) (3) (4)	٦
2		32		62			92		
3		33	(1) (2) (3) (4)	63	(1) (2) (3) (4)		93		
4		34	(1) (2) (3) (4)	64	(1) (2) (3) (4)		94		
5	1234	35	1234	65	1234		95	1234	
6	1234	36	1234	66	1234		96	1234	
7	1234	37	1234	67	1234		97	1234	
8	1234	38	1234	68	1234		98	1234	
9	1234	39	1234	69	1234		99	1234	
10	1234	40	1234	70	1234		100	1234	
11	1234	41	1234	71	1234			IRUCTIONS FOR MARKING	
12	1234	42	1234	72	1234		1 54	OMR SHEET	all
13	1234	43	1234	73	1234		point pen		
14	1234	44	1234	74	1234		2. Cir	cle should be kened completely an	d
15	1234	45	1234	75	1234		properly 3. Cutting and erasing on the sheet are not allowed 4. Sheet should not be folded or crushed. 5. Don't use marker or white		
16	1234	46	1234	76	1234				
17	1234	47	1234	77	1234				
18	1234	48	1234	78	1234				
19	1234	49	1234	79	1234		CORR		
20	1234	50	1234	80	1234		WROM		
21	1234	51	1234	81	1234				_
22	1234	52	1234	82	1234			Candidate Signature	
23	1234	53	1234	83	1234				
24	1234	54	1234	84	1234				
25	1234	55	1234	85	1234				
26	1234	56	1234	86	1234				
27		57	1234	87	1234				
28		58	1234	88	1234				
29		59		89					
30	1234	60	1234	90	1234				