APPENDIX FOUR

FINAL TEST FORM

(English)

APTITUDE TEST
IN
SCIENCE

Sections I to VII

Please read the following instructions carefully :

1. This test booklet contains seven sections please answer them in serial order.

2. Each section contains a number of items - Omit no item. Instructions and illustrations are given for your guidance. Kindly go through them very carefully and answer the items.

3. Answer the test items in the booklet as rapidly as you can in the separate answer-sheet given to you.

4. Write your name, name of the school and other requested information in the proper places in the answer sheet.

5. When you complete your work, please return the test booklet along with the answer sheet.

DO NOT MAKE ANY MARK IN THIS TEST BOOKLET

: S E C T I O N - 1 :

DIRECTIONS:- After carefully studying the number series given on the left below, tick off the correct succeeding number in the Answer sheet, out of the given numbers on the right .

		a	b	c	d
EXAMPLE	1, 4, 9, 16, 25.....	32,	34,	36	38

The numbers given here on the left are all the squares of the natural numbers 1,2,3,4,5, the succeeding number should be the square of 6. So the answer to be ticked off out of the given numbers on the right is 36.

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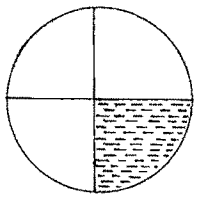
		a	b	c	d
1.	3, 6, 12, 24.....	46	47	48	49
2.	2, 4, 6, 8.....	9,	10	11	12
3.	½, ¼, 1/8, 1/16.....	1/28	1/30	1/32	1/34
4.	1, 6, 11, 16.....	20	21	22	23
5.	0.2, 0.4, 0.6, 0.8.....	0.9	1.0	1.1	1.2
6.	0.1, 0.01,.001,.0001.....	.000001,	.0000001;	.00000001	00001
7.	½, 1, 1½, 2.....	3	3/2	5	5/2
8.	0.5, 0.55, 0.6, 0.65	0.85,	0.65	0.7	0.75
9.	1, 8, 27, 64	120	125	130	135
10.	8181, 2727, 909, 303.....	404	202	101	505

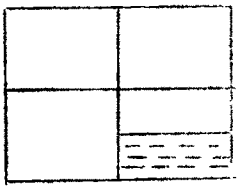
11. The percentage of the area shown with dots in the figure is equal to



a) 20 b) 25 c) 40 d) 60

of the total figure.

12 The area shown with dots in the figure is equal to



a) 1/4 b) 1/8 c) 1/16 d) 1/32

13. The fraction 1/6 can be expressed as a percentage

a) $16\frac{3}{4}$ b) 16 c) $16\frac{1}{2}$ d) $16\frac{1}{4}$

14. The fraction 19/20 can be expressed as a percentage as

a) 95 b) 90 c) 85 d) 80

15. The fraction 13/20 can be expressed as a percentage as

a) 55 b) 60 c) 65 d) 70

16. The atmosphere exerts a pressure of 15 lbs per square inch, the total force on the lid of a box 5" long and 2" wide is:

a) 15 lbs b) 75 lbs c) 90 lbs d) 150 lbs

17. If a^3 = 729 the value of 'a' is given by

a) 8 b) 9 c) 10 d) 13

18. If x^3 = 1.331, the value of the 'x' is given by

a) 1.21 b) 1.11 c) 1.01 d) 1.1

(

19. The temperatures recorded on a particular day are as follows

Morning	Temperatures
11-00 A.M.	32° c
12-00 noon	36° c

The temperature reading at 11-30 A.M. is given by

a) 34° c B) 35° c c) 36° c d) 37° c

20. The day temperatures recorded on the following day are as follows

Morning	Temperatures
10-00 A.M.	30° c
11-00 A.M.	35° c

If the rise of temperature is uniform, the temperature at 10.45 A.M. is given by

a) 30° c b) 33.25°c c)33.5°c d)33.75°c

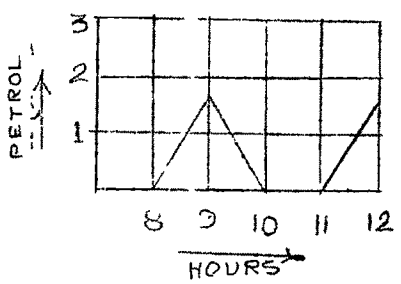
21. A motorist started from Warangal to Hyderabad at 8-00 A.M. As there was some engine trouble during the journey, he spent some time to set it right. From the figure it can be inferred that the engine trouble started between the hours

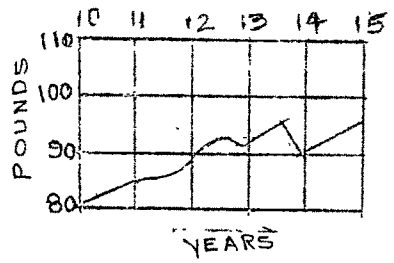
a) 8-00 to 9-00 A.M.

b) 9-00 to10-00 A.M.

c)10-00 to11-00 A.M.

d)11-00 to12-00 noon



22. 

The graph indicates a boy's weight in different years up to the age of 14. The boy lost his weight most in between the years.

a) 10- 11 Years
b) 11- 12 Years
c) 12- 13 Years
d) 13- 14 Years

23. The previous graph indicates that the boy weighs exactly 90 lbs at the age of

a) 11 Years
b) 12 Years
c) 13 Years
d) 14 years

DIRECTIONS:- In each of the following questions you find two series of numbers. Some relationship exists between the corresponding numbers in the two series. The correct relationship is shown by one of the four alternatives given on the right hand side. Tick off the correct one.

EXAMPLE: If A = 0, 1, 2, 3..... B = -1, 0, 1, 2

a) B = A + 1
b) B = A + 2
c) B = A - 1
d) B = A - 2

The numerical values of A = 0,1,2,3 when substituted in the relation B= A-1 give values -1,0,1,2 for B. This is the only relation that satisfies the values of A and B and hence the right answer to be ticked off is B = A - 1

24. If A = 2,3,4,5
B = 1,3,5,7

a) B = A + 3
b) B =2A - 3
c) B =2A + 5
d) B =2A + 3

25. If A = 1, 3, 5, 7
B = 5, 9,13,17

a) B = 2A - 3
b) B = 2A + 3
c) B = A + 4
d) B = 2A - 1

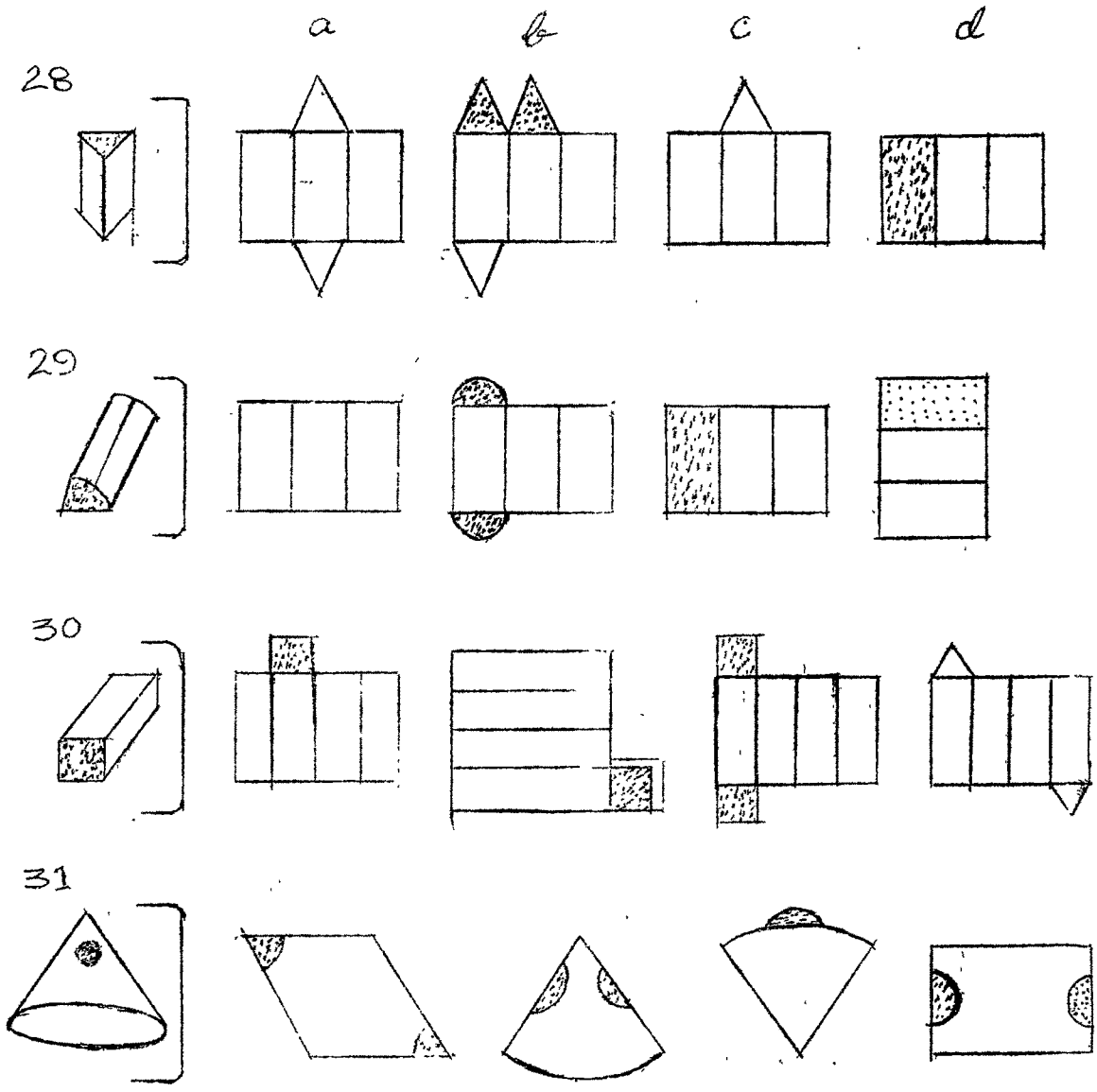
26. If A = 1, 2, 3, 4
B = 2, 5, 8,11

a) B = 3A + 1
b) B = 2A + 1
c) B = 2A
d) B = 3A - 1

27. If A = 2, 3, 7, 8
B = 9, 11,19,21

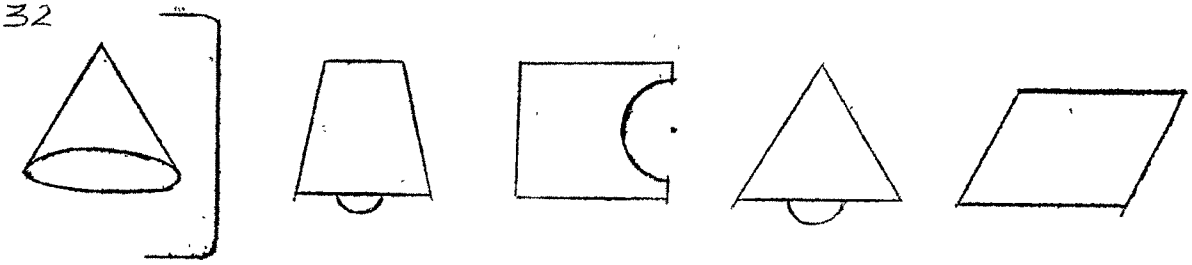
a) B = A + 7
b) B = 2A + 3
c) B = 2A + 2
d) B = 2A + 5

DIRECTIONS:- Paper models given on the left side, closed at both ends and hollow, when opened assume one of the shapes shown on the right side. Tick off the correct shape from the figures given on the right.



a b c d

32



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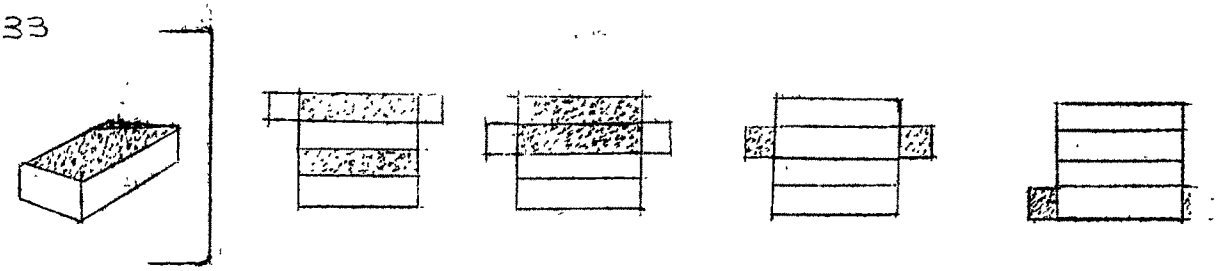

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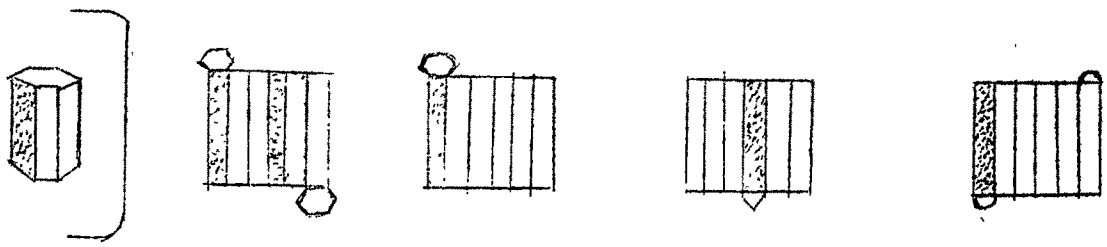

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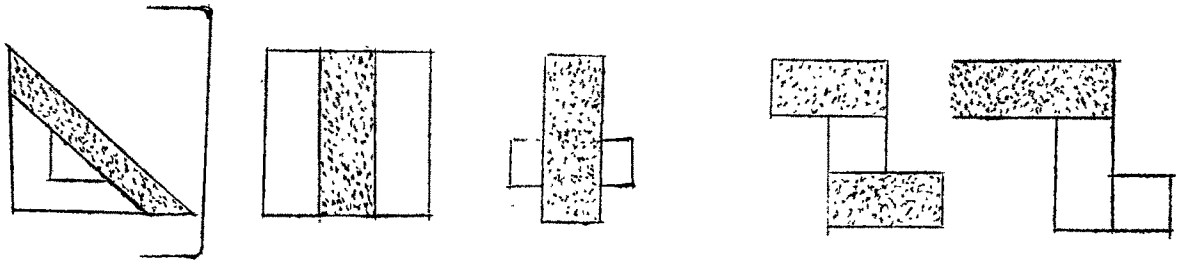
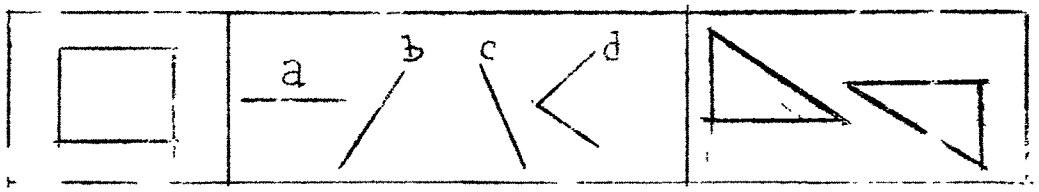
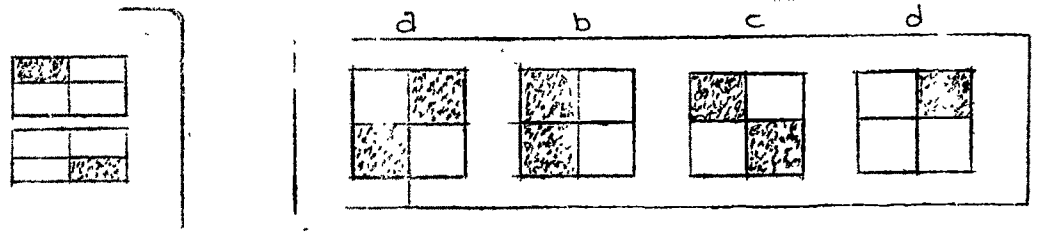


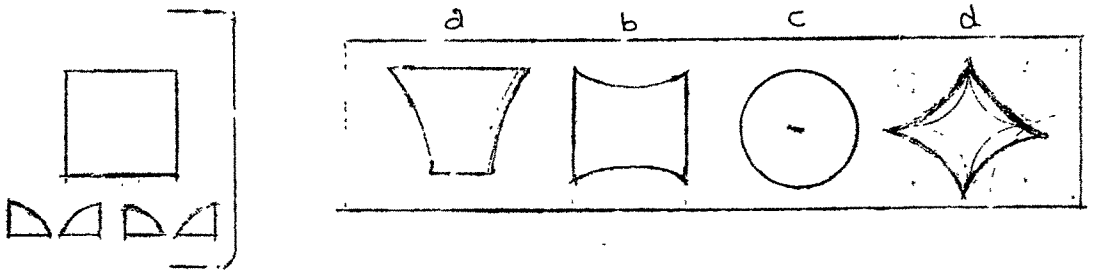
36 DIRECTIONS: - The figure given on the left side is cut into two parts shown on the extreme right. Tick off the correct line of cutting that indicates the direction in which the figure is cut, from the alternatives given.



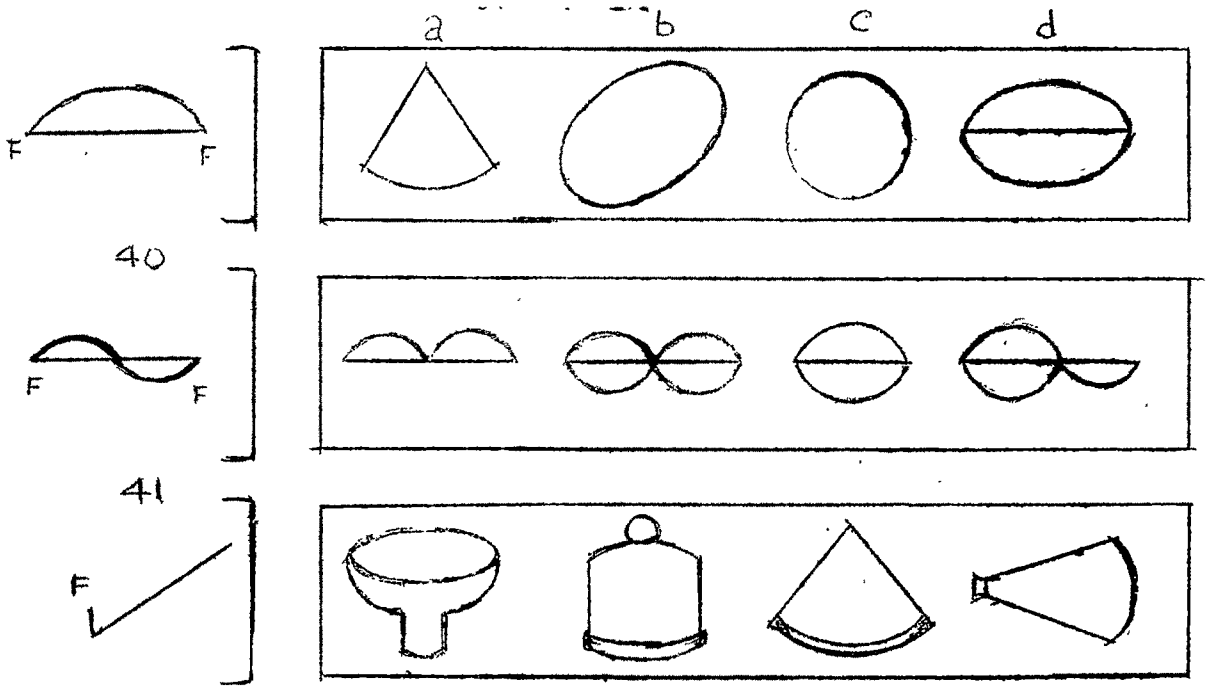
37 Two drawings are given on the left side. Drawing number '1' is superimposed on drawing number '2' as it is without changing its position. Tick off the correct superimposed drawing out of the given four on the right side.



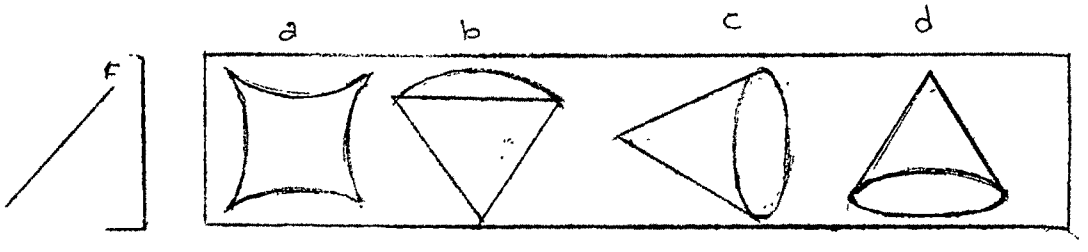
38 From the four corners of the square, four pieces (sectors) of paper are cut as shown in the figures on the left side. Tick off the correct shape of the remaining paper that would look like, from the shapes given on the right.

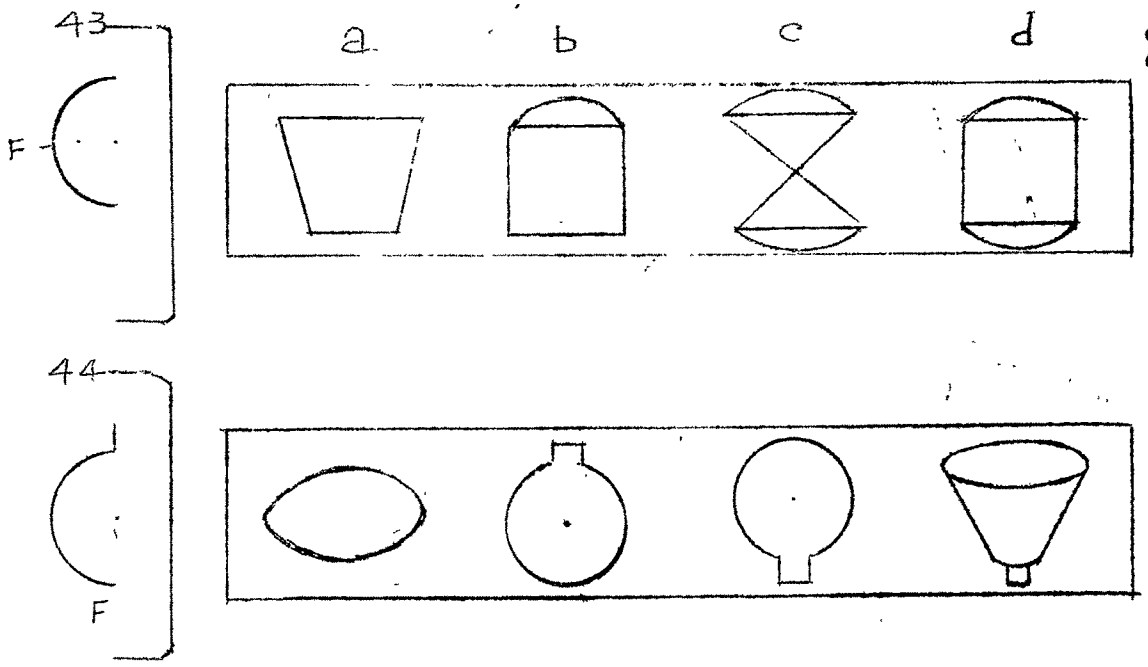


39. A wire twisted in the form of a curve shown on the left, is rotated about its X-axis (→). Tick off the correct shape of the curve in its rotating position. The fixed end is denoted by the letter 'F'

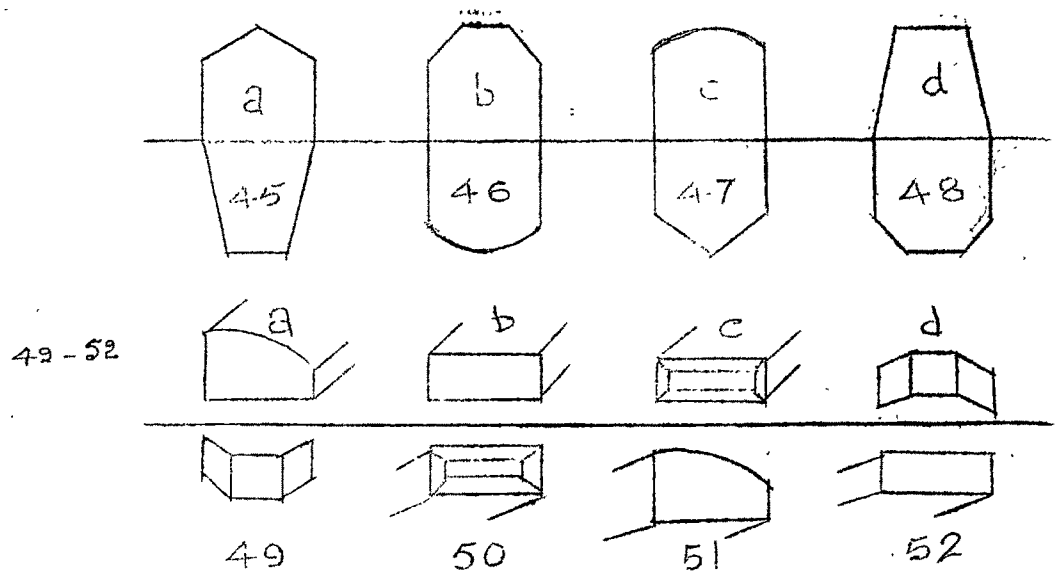


42 A wire shown on the left, is rotated about its 'Y' axis (↑),tick off the correct shape given by the rotation of the wire. The fixed end is denoted by the letter 'F'





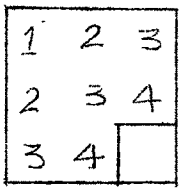
45 to 48. Match the following figures given in halves in the first row below, with the remaining halves of the second row. Tick off the correct figure from the alternatives, for each of the items 45 to 48 and 49 to 52



: S E C T I O N - 3 :

DIRECTIONS:- In the matrices given below study carefully the columns and rows and tick off the correct number or symbol that should be written in the blank space from the given set of alternatives on the right.

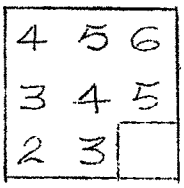
53



a b c d

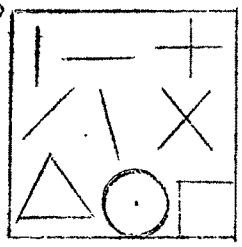
6 5 4 3

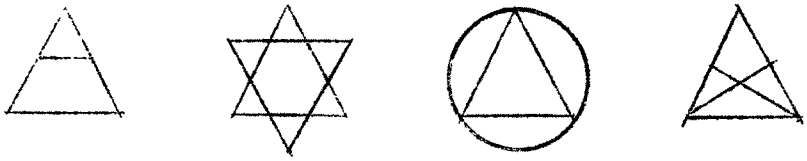
54



5 4 3 2

55





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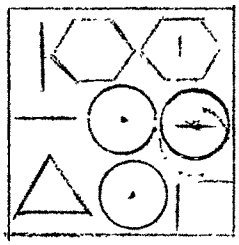

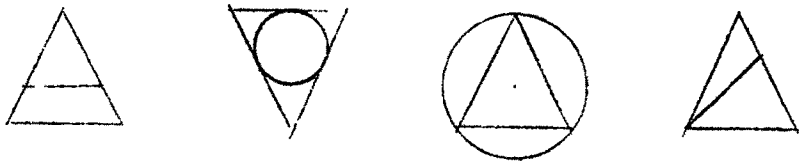

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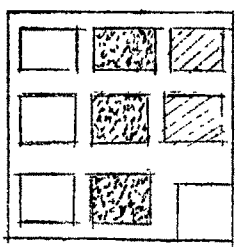

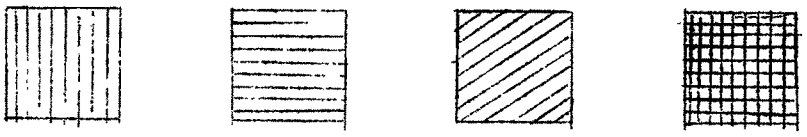

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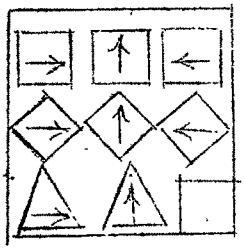
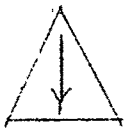


a

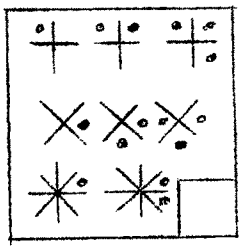


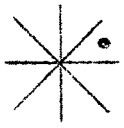
b

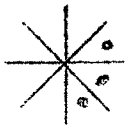
c

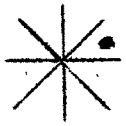
d

59









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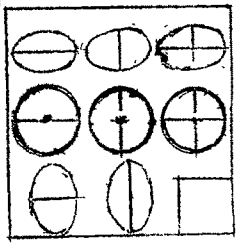

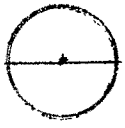

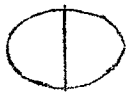

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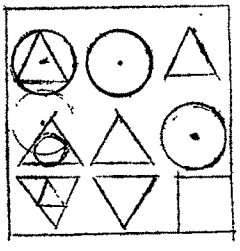

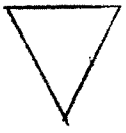

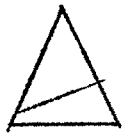

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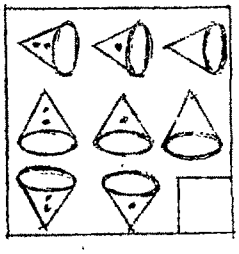

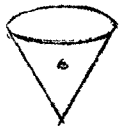

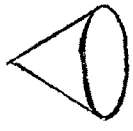

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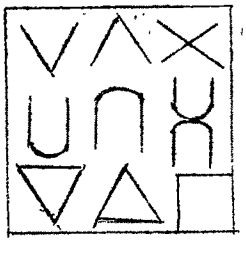

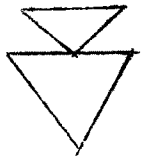

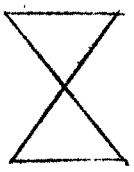

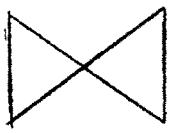

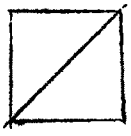

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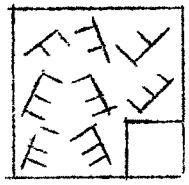
d

64

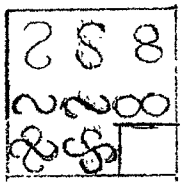


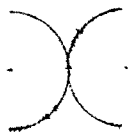
a

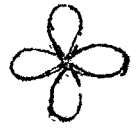
b

c

65

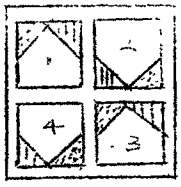


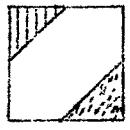


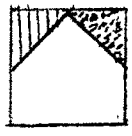


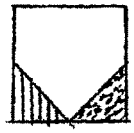
DIRECTIONS:- Carefully go through the figures given on the left side and tick off the figure that is next in series from the set of alternatives given on the right side.

66

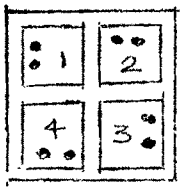


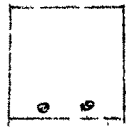


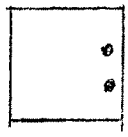


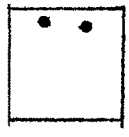


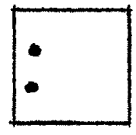
67



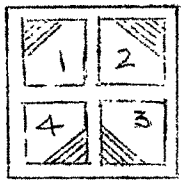


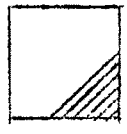


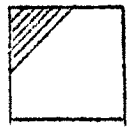


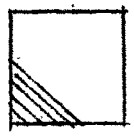


68

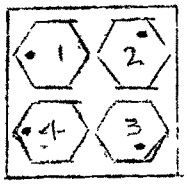


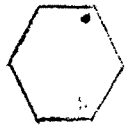


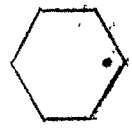




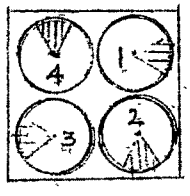
69

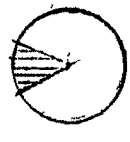


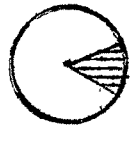




70

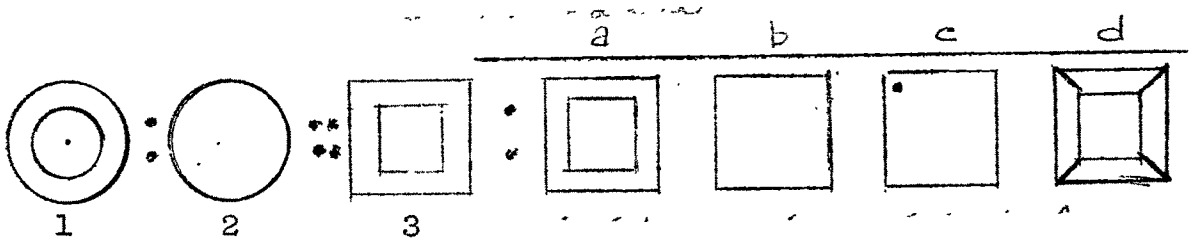




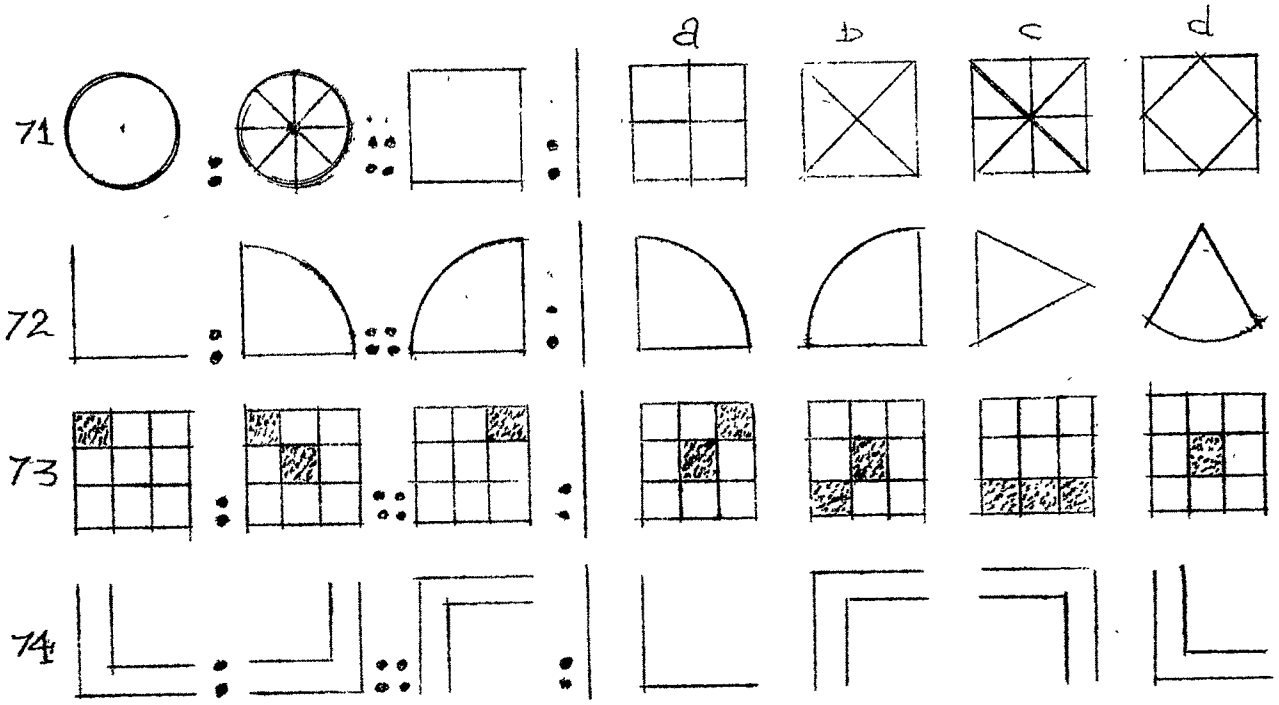


: S E C T I O N - 4:

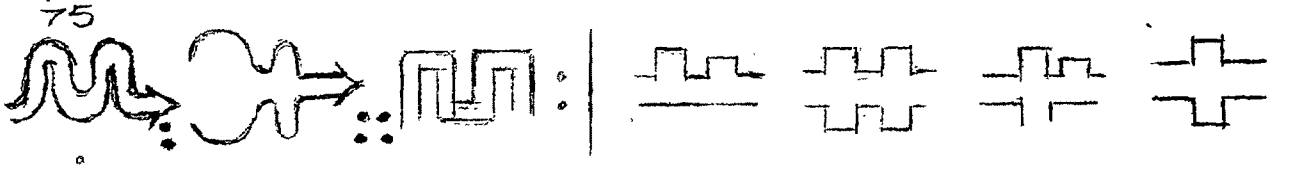
DIRECTIONS:- In the following items closely observe and study the relationship that exists between the first two figures and suggest a fourth one. The relationship of 3 and 4 should be the same as the one that exists between 1 & 2.



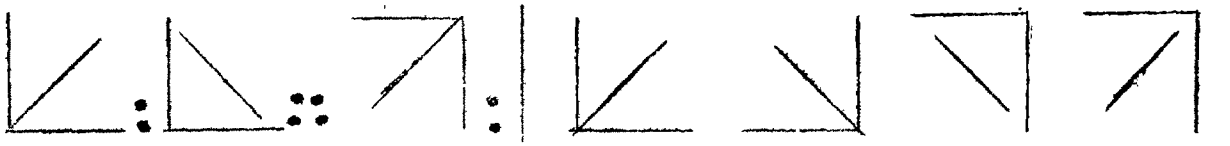
A close study of the figures 1 and 2 shows that the second figure does not contain the inner circle as the first one. So a fourth figure that is selected from the given four alternatives a,b,c,d should be such as to match with the figure 3 having the same relationship as 1 and 2. So the figure indicated under 'b' the rectangle, is to be ticked off for the correct answer.



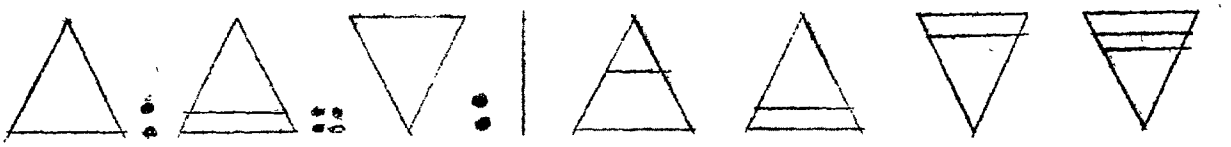
75



76

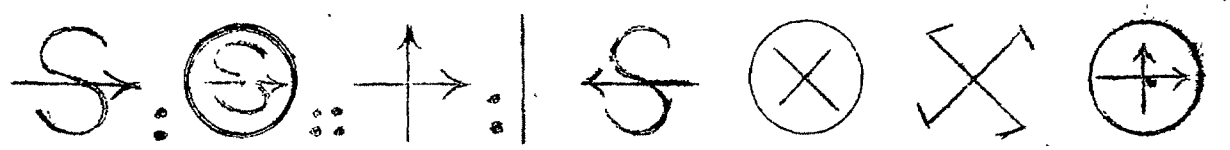


77

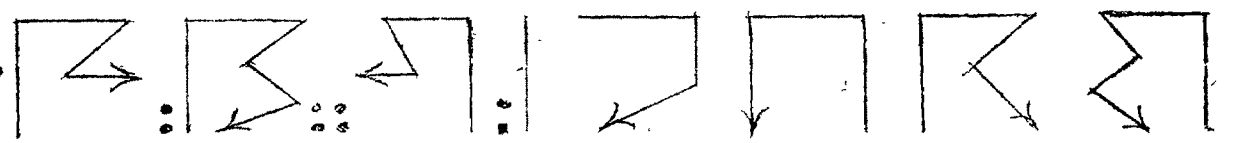


78

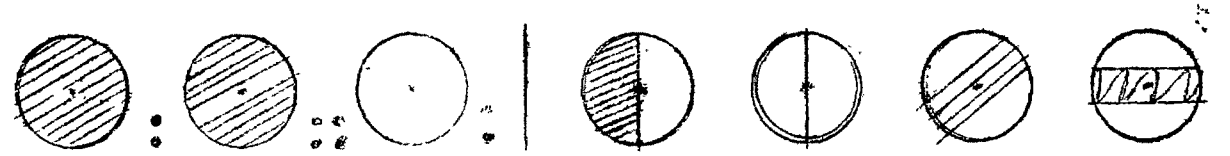
79



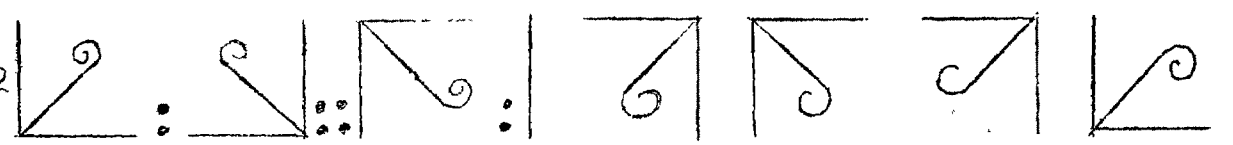
80



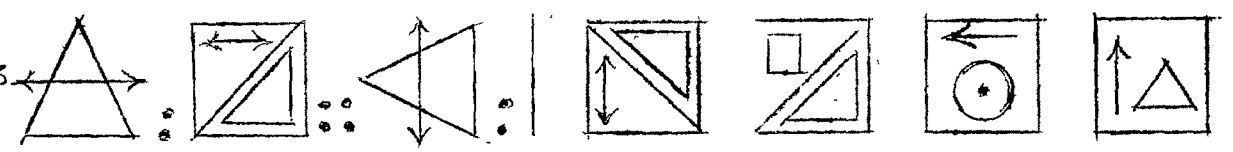
81



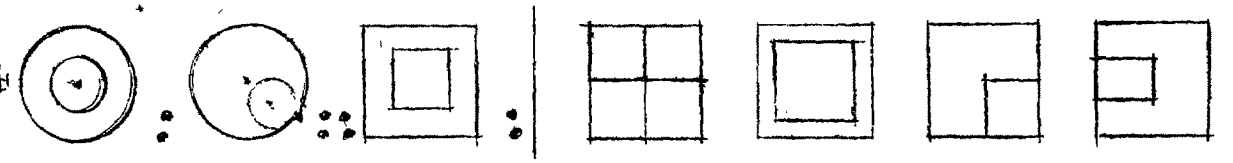
82

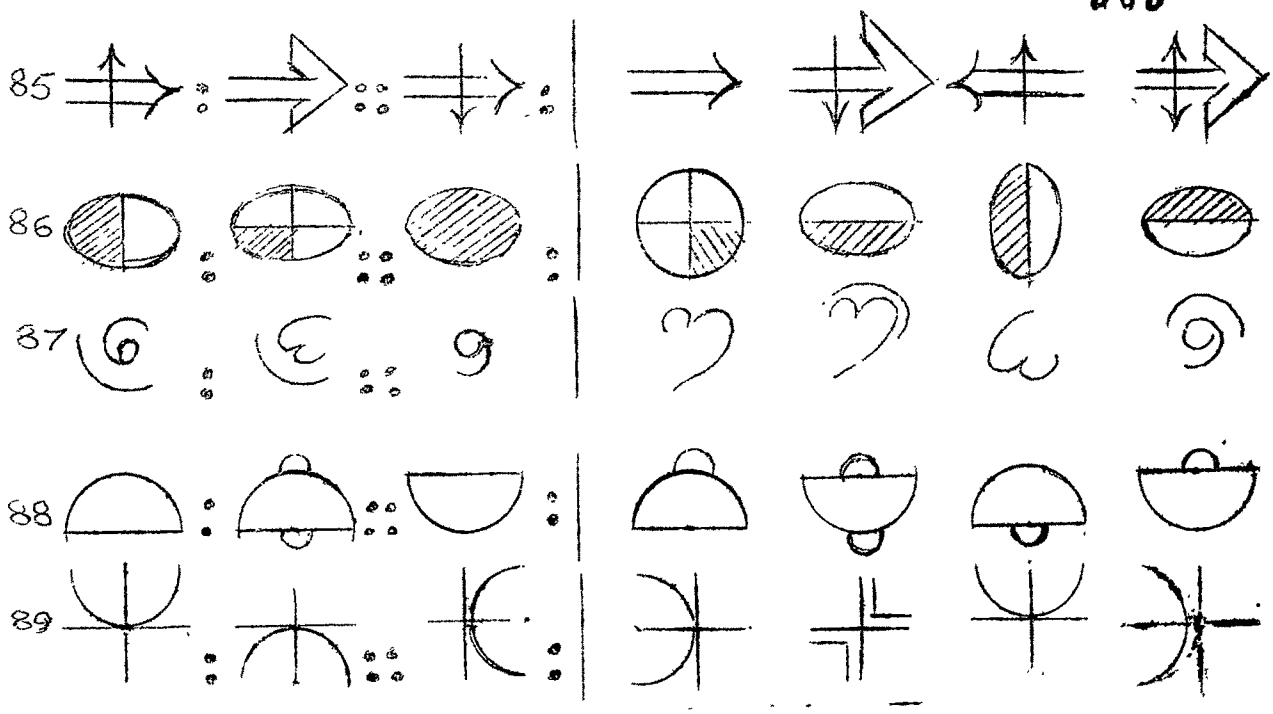


83



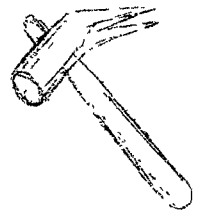
84





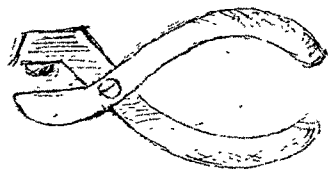
: S E C T I O N -5 :

90. The instrument shown on the left, is used to



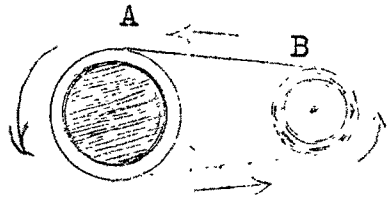
a) pick up nails
b) make holes
c) break open things

91. The instrument is used for boring holes in



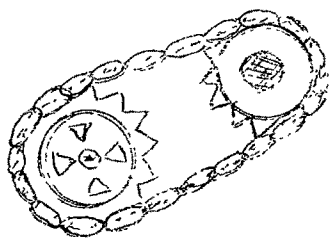
a) metallic plates
b) wooden blocks
c) Sheets of paper

92 Which of the wheels moves faster ?



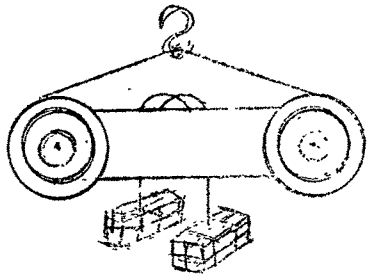
a) A
b) B
c) None

93 The chain driven mechanism shown in the figure



a) Resists wear and tear
b) works quite smoothly
c) helps carrying heavy loads

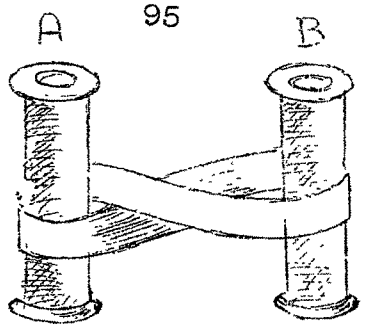
94



The pulley machanism helps to

a) reduce the friction
b) change the direction of motion
c) lift the load smoothly

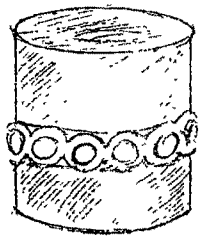
95



As the second pulley 'B' rotates in clock-wise direction the first one

a) remains unaffected
b) moves in clock wise direction
c) moves in anticlock wise direction

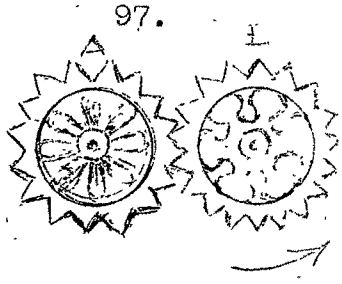
96.



The use of small marbles between the two boxes helps the box 'A' to have

a) smooth rotation
b) slow movement
c) unstable motion

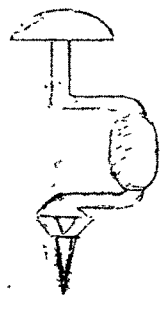
97.



The toothed wheel 'B' moves as per direction shown, how does the wheel 'A' rotate?

a)
b)
c)

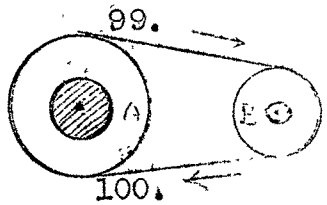
98.



With the instrument shown holes are drilled by

a) rotating the point needle
b) hammering the handle
c) merely piercing the needle

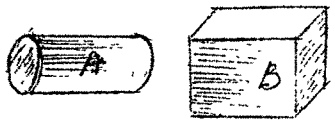
99.



Which of the wheels makes more number of rotations?

a) A
b) B
c) Equal in both

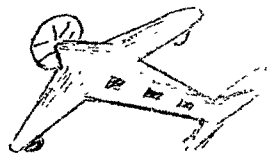
100.



Which of these solid blocks will be easier to move?

a) A
b) B
c) None of them

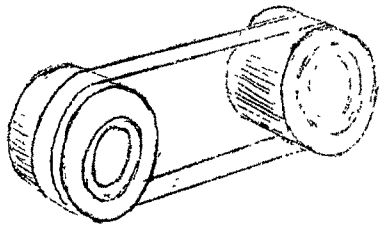
101.



If a bomb is released from a moving aeroplane by which track will it falls to the earth

a)
b)
c)

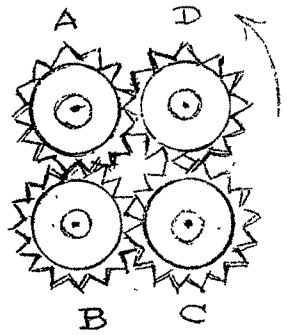
102.



The belt driven mechanism is used because of its

a) smooth and fast run
b) steady and uniform speed
c) inexpensive nature

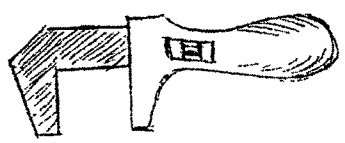
103.



As the wheel 'D' rotates in the direction shown how do the wheels A and B move?

a)
b)
c)

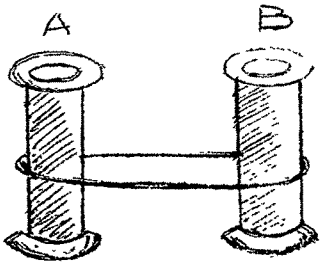
104.



The instrument works with

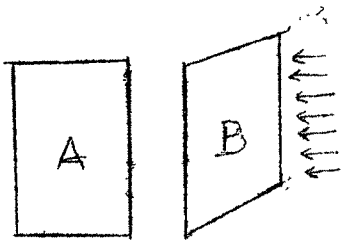
a) one of the jaws fixed
b) two adjustable jaws
c) no adjustable means

105. As the pulley 'A' rotates, the second pulley rotates in



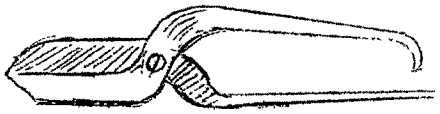
a) the same direction
b) the opposite direction
c) no fixed direction

106. The pressure due to the wind will be a maximum on the card board



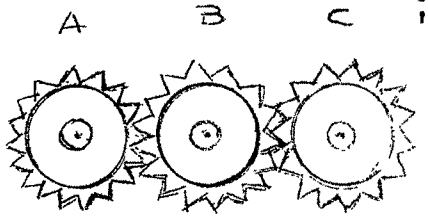
a) A
b) B
c) None

107. The appliance is used for cutting



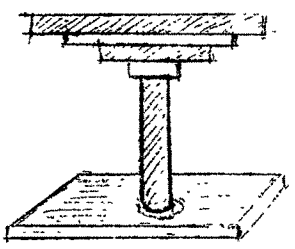
a) paper
b) metals
c) wood

108. When the toothed wheel 'A' rotates in the anticlock-wise direction the wheel 'C' rotates



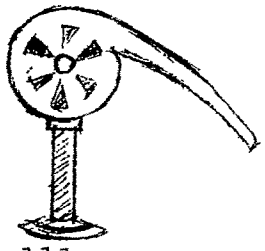
a) in the direction as 'A'
b) Opposite to the direction of 'A'
c) in the direction of 'B'

109. The appliance is used for making



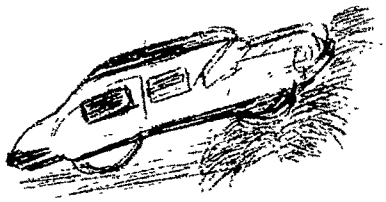
a) large holes of varied type
b) holes of fixed diameter
c) small holes of varied diameters

110. Instrument is used for



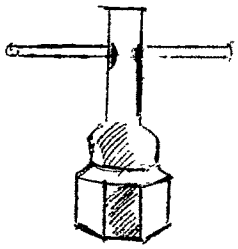
a) blowing out air
b) sucking in air
c) pumping out water

111. Which of the wheels experience downward thrust



a) A
b) B
c) None of them

112. The appliance is helpful to



a) make small holes of different sizes

b) unwind screws and nuts of different sizes

c) fix nails of varied sizes

: S E C T I O N -6 :

DIRECTIONS:- Study the given situation carefully. Tick off the correct cause of the situation out of the three alternatives given

113. An egg that was floating in a glass of fresh water suddenly sank to the bottom when salt was added. It was because of the

a) solubility of water
b) Increase in the density of water
c) low density of water

114. A boy got sunburnt while going to school on a sunny day during noon. It is because

a) sun rays travel shorter distance at noon
b) The rays of the sun fall normal to the surface at noon
c) intensity of illumination will be at its maximum

115. A washerman uses electric iron to clean the clothes. He is complaining of heavy electric bills since its use. It is due to the

a) incomplete connections in the main circuit
b) heavy drawal of current by the instrument
c) Defective parts of the electric iron

116. My friend possesses an interesting clock where in the numbers can be seen even during night. It is due to the

a) self illuminating device
b) presence of Radium coating
c) numbers being painted white

117. While passing through a city, one would come across a number of buildings having on its top a pointed rod connected to the earth by copper cables. The rods

a) are kept for the absorption of heat
b) to carry the lightning charges to earth
c) form a part of the design building construction

118. It was summer. Telephone wires appeared to be a bit loose. It was due to the

a) defect in the material of the wires
b) contraction of molecules in the wires
c) expansion of wires due to heat

119. On a stormy day there was thunder and lightning. Lightning was first seen before the sound of the thunder was heard. The cause being that the

a) atmospheric disturbances obstructed sound waves
b) sound waves have to travel longer distances
c) light travels faster than sound

120. Helicopters are used at places where aeroplanes are inaccessible specially hilly areas and also used for rescue operations. It is because

a) it is inexpensive to use
b) the propellers rotate horizontally
c) it rises vertically without the need of a run-away

121 On a windy day there were gusty winds. The weather bulletin indicated the heavy inflow of winds in a particular area. It was due to the

a) high pressure in the area
b) temperature difference
c) low pressure created

122 A rocket is being launched into space the effect of the fuel being fired backwards is that the rocket

a) followed the direction of firing
b) moves forward with full speed
c) remains in its position unchanged

123. A boy came home fully drenched in rain. While combing his hair he was remarking about the elongation of hair in its length. It is because

a) the hair appears elongated while combing
b) it gets elongated in presence of water
c) it gets elongated even when dry

124. A vistor who was at the gate was coming towards the room unobserved by any one. The dog suddenly pounced on the visitor even before he entered the door. It was because

a) the animals hear very low vibrations of sound
b) dogs can smell very easily
c) the dog imagined the presence of the visitor

125. In big dams large sheets of copper will be used in their construction. They are used to

a) conduct aaway the extra heat
b) give stability to construction
c) support the strength of the material used

126. We are told that even a concrete road expands slightly on a hot day. But inspite of it the road is not at all damaged. The cause being that, to make allowance for expansion

a) spaces filled with tar are built into the concrete.
b) space is left at regular intervals in the surface
c) sufficient space is left at the edges

127. The use of umbrellas of black cloth is a common feature observed in our daily life. They are also used in summer. It is because it

a) radiates heat
b) takes in lot of dirt
c) absorbs outside heat giving some relief

128. In some lakes one would come across solid sheets of ice floating on water. It is due to

a) the density of water at 4^{o} c being greater than the density of ice
b) the density of water being always greater than that of ice
c) the contraction of water while changing its state to ice

129. A boy was writing a letter to his friend suddenly the smooth flow of the ink stopped. It was flowing in thick big drops. The cause being

a) the defective nib of the pen
b) the defective tongue obstructing the free flow
c) the ink is exhausted in the barrel

130. An Educational film was shown in a school. The different stages of a situation projected on the screen created an impression of continuity. It is because of the

a) Projection of film roll in quick succession
b) principle of persistence of vision
c) fast motion pictures

131. A cyclist in motion going at top speed along a road, took a sudden turn towards a curved path. He was leaning heavily towards the centre of curvature. It is only to balance the

a) jerky motion along the curved path
b) force throwing away from the centre of curvature
c) pull towards the centre of curvature

132. On a rainy day it was quite sultry, there was perspiration . It was due to the

a) presence of plenty of humidity in air
b) still and motionless wind
c) evaporation process being at a slow rate

133. An accident took place on a hot day near a 'Cool drink shop'. The soda bottles got burst and many people were injured, the bottles were not kept in a cool place. It is due to the

a) the expansion of the glass material of the bottles

b) glass material being quite brittle

c) pressure caused on account of gaseous expansion inside

134. When a liquid drop splashes the drop splits into a number of small drops. The smaller drops always assume a spherical shape. It is due to the

a) gravitational force of attraction

b) internal pull of the molecules

c) tension on the surface of the drops

(Contd.....)

: S E C T I O N - 7:

DIRECTIONS: The examples given below contain facts about simple experiments. Tick off the correct interpretation of facts from the given set of alternatives

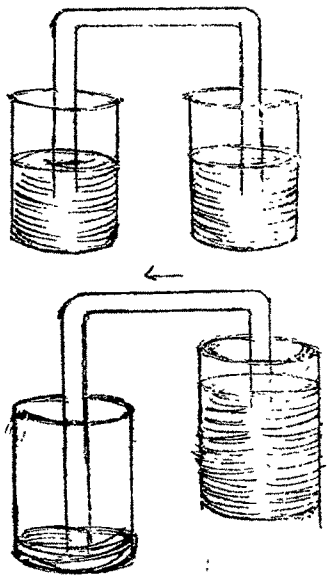
135. Pounded ice was placed in two test tubes separately. The ice in the test tube that was mixed up with some black soot and dirt melted more rapidly when heated than the ice in the other test tube. It means that the black soot and dirt

a) lower the melting point

b) absorb more heat

c) quicken the process of melting

136. A bent glass tube when placed in the first position shown, no water flowed. In the second position water continued to flow in the direction indicated. It is to be concluded that water



a) flows from a higher level to a lower level

b) flows if the levels are equal

c) does not flow if the bent glass tubes are of unequal length

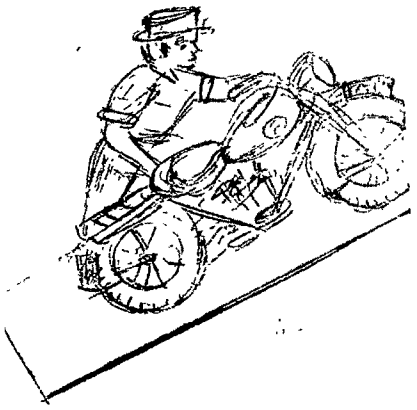
137. In a snowy place boys were practising skating on the icy ground. The path carved out as they skated soon disappeared. It showed that the

a) Ice that melted under pressure during skating soon got solidified

b) surrounding temperature froze the ice that melted

c) path carved out is too narrow to be seen by the naked eye

138. A motor cycle is to be taken to a platform at a particular height. It was seen to be easier to pull the cycle along a board kept inclined at an angle. The force required to pull it along the board is seen to be much less. It indicated that

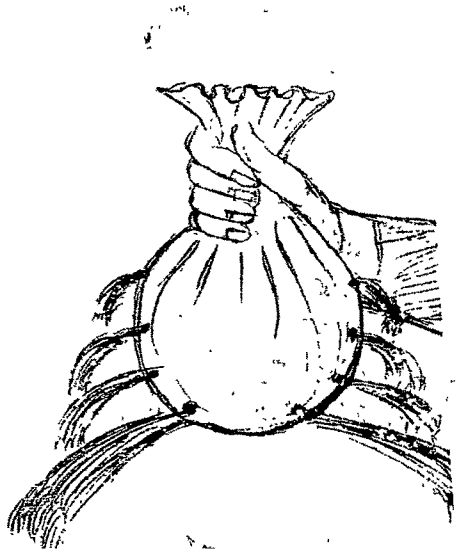


a) up an inclined plane less force is exerted over a greater distance

b) work done up an inclined plane is more

c) the work done in lifting it vertically is less

139. Water is poured into a heavy paper bag. The bag is lifted carefully and four holes are punched with a needle with 1" difference at different heights on both sides. Water from the holes near the bottom is seen to gush farther. It shows that



a) sufficient air pressure is not exerted on the upper levels

b) limited space at the bottom levels compresses the water

c) pressure increases with depth

140. A full blown toy balloon is rubbed with fur briskly. When it is placed against the wall it stays where it is left. It shows that the

a) charged balloon gets attracted towards the wall

b) air pressure forces the balloon to one side

c) upward pressure of air balances earth's gravity

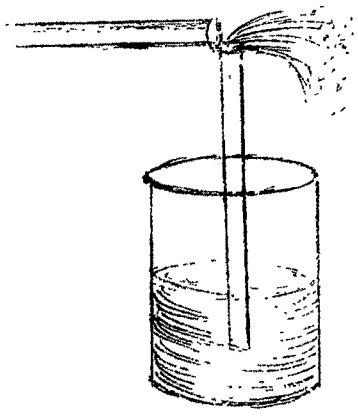
141. One day a motor driver purchased gasolene in the morning, a change from his old practice of purchasing it in the afternoon. He found its purchase more beneficial in the morning than in the afternoon. It only showed that the gasolene molecules

a) got expanded and occupied more space in the afternoon

b) occupied its normal space in the morning time

c) contracted to a much less volume in the morning

142. Two soda straws one placed in water vertically and the other kept horizontally normal to the first one and just above it. Through the straw kept horizontally, air is blown. Water gets sprayed. It denotes that the

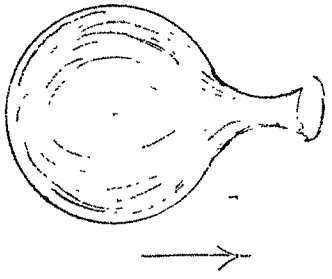


a) partial vacuum created in the first straw by the air jet forces water upwards

b) atmospheric pressure forces the water in the first straw upwards

c) stream of air that blows across, sucks in water

143. A balloon is inflated and its mouth closed with fingers. When the air contained in it is allowed to escape the balloon will be propelled forward by the escaping air. It is to be concluded that the



a) balloon moved forward due to the pressure inside

b) balloon movement is made possible by the law of action and reaction

c) elastic property of the balloon pushed it forward

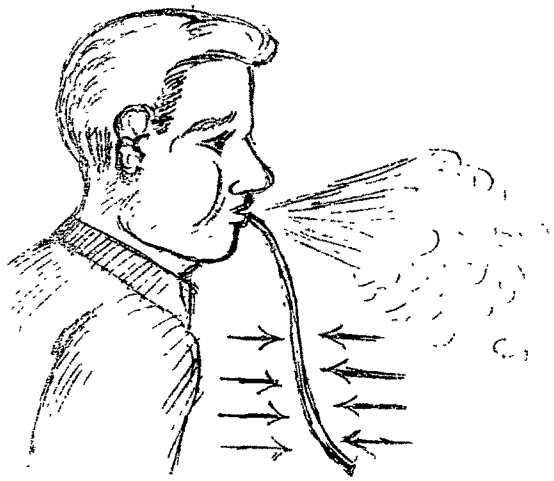
144. A model dam was constructed by students. Walls of the dam were made thick. They were advised to make the bottom of the walls much thicker. The advice was followed. It means that the thicker walls at the bottom

a) increase the stability of construction

b) are made to with stand the increasing water pressure with depth

c) are made to with stand the outside atmospheric pressure

145.



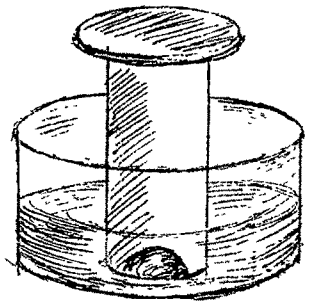
A paper is held infront of the chin with its upper surface curved as shown in the diagram, just below the lower lip, breath is blown steadily across the paper. To start with no movement is observed in the paper but soon it raises up. It denotes that the paper

a) is very little influenced by air pressure below

b) raises as the breath of air reduces the air pressure above it

c) is pressed down by the atmosphere above it

146.



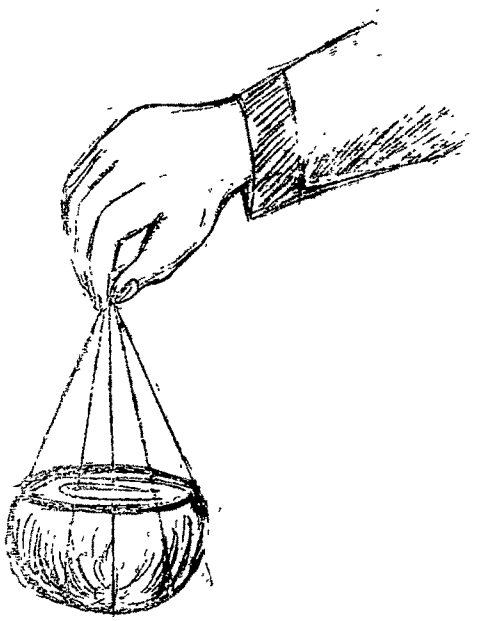
When one covers the cork floating on water with a gas jar, the cork comes down to the bottom. It denotes that the

a) cork is lighter than water

b) air presses down the cork to the bottom

c) water pressure forces the cork to the bottom

147.



A small sized bowl is filled nearly with water. A wire is securely fastened to the bowl. It is swung round rapidly at arm's length. No water was spilt. It denotes that the

a) atmospheric pressure prevented water from spilling

b) force that acts away from the centre of rotation prevented the spill of the water

c) force acting towards the centre of rotation prevented the spill of water

148. A co-passenger in the plane, during a flight complained about his clothes being spoiled by the ink spilt from his fountain pen. The pen was only half filled, when he boarded the plane. The incident revealed that

a) ink overflowed during the sudden movements of the plane

b) low atmospheric pressure at high altitude caused it to overflow

c) the density of the atmosphere was low at high altitudes

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