Talent Search Exam. 2017

TEST CODE **9000**

for IX

BOOKLET **C**

Duration : 2 Hours **Max. Marks : 360**

Please read the instructions carefully. You are alloted 5 minutes specifically for this purpose.

INSTRUCTIONS

A. General :

1. This booklet is your question paper containing **90 questions**. The booklet has **10 pages**.

2. The question paper contains blank space on back for your rough work. No additional sheets will be provided for rough work.

3. It is mandatory to use **Blue or Black Ball Point Pen** to darken to appropriate circle in the answer sheet.

4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.

5. Fill in the boxes provided below on this page and also write your Name and Roll Number in the space provided.

6. Do not use white-fluid or any other rubbing material on answer sheet. Before handing over the answer sheet to the invigilator, candidate should check that **Roll No, Test code and Book Code** have been filled and marked correctly. Immediately after the prescribed examination time is over, the **Answer sheet is to be returned to the invigilator.**

B. Filling the Answer Sheet :

7. On **Side-1** of Answer Sheet write your name, Enrollment Number and Name of the centre in the respective boxes. **Do not write anything on Side-2.**

8. Put your signature space provided on the Answer Sheet affirming that you have verifed this.

9. All question carry **+4 Marks** for Right Answer and **-1** for Wrong Answer.

PROCEDURE OF FILLING UP THE ANSWERS IN ANSWER SHEET

Wrong Filling	Right Filling
✓ A B C D Tick mark	● B C D Fully darken with Pen
✗ A B C D Cross mark	● B C D Fully darken with Pen
◓ B C D Half filled or semi dark	● B C D Fully darken with Pen
A B C D Light filled	● B C D Fully darken with Pen

Name of the candidate (In Capital Letters)

Enrollment Number

I have read all the instruction and shall abide by them.

.....

(Signature of the candidate)

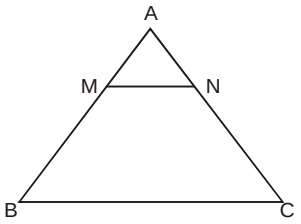
I have verified all the information filled in by the candidate.

.....

(Signature of the Invigilator)

PART-I (MATHEMATICS)

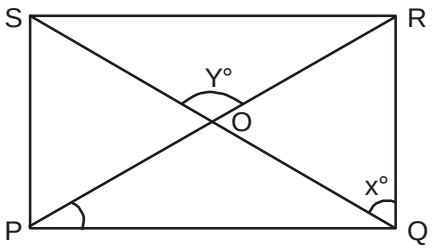
1. In the given fig. M & N are the mid points of sides AB & AC. If the length of BC is 15 cm. Then length of MN is :



(a) 15 cm (b) 7.5 cm

(c) 15.3 cm (d) 15.05 cm

2. In the given fig. PQRS a rectangle. If RPQ 30 then the value of (x + y) is



(a) 90° (b) 120°

(c) 150° (d) 180°

3. If the bisector of A & B of a quadrilateral ABCD intersect each other at P. of B & C at Q, of C & D at R and of D & A at S then PQRS is a.

(a) A rectangle (b) A rhombus

(c) A square (d) Kite

4. If the points (k, k-1), (k + 2, k + 1) and (k, k + 3) are three consecutive vertices of a square, then its area (in square units) is

(a) 2 (b) 4

(c) 8 (d) 6

5. Centre of the circle is (a, b). If (0, 3) and (2, 0) are two points on a circle, then find the relation between 'a' and 'b'

(a) 4a- 6b - 5 = 0 (b) 4a + 6b - 5 = 0

(c) - 4a + 5 = 0 (d) 4a - 6b + 5 = 0

6. Find the product of intercepts made by the line 7x - 2y - 14 = 0 with co-ordinate axes.

(a) -7 (b) 2

(c) 14 (d) -14

7. The smallest among the surds $\sqrt{10}$ $\sqrt{5}$, $\sqrt{19}$ $\sqrt{14}$, $\sqrt{22}$ $\sqrt{17}$ and $\sqrt{8}$ $\sqrt{3}$ is

(a) $\sqrt{10}$ $\sqrt{5}$ (b) $\sqrt{19}$ $\sqrt{14}$

(c) $\sqrt{22}$ $\sqrt{17}$ (d) $\sqrt{8}$ $\sqrt{3}$

8. $\sqrt{\frac{81}{64}\sqrt{\frac{81}{64}\sqrt{\frac{81}{64}\sqrt{\frac{81}{64}}}}}.....$

(a) $\frac{81}{64}$ (b) $\frac{9}{8}$

(c) $\frac{3}{2}$ (d) $\frac{3}{2\sqrt{2}}$

9. $\sqrt{3^2\sqrt{9^2\sqrt{(81)^2\sqrt{16^{16}}}}}$

(a) 6×2^4 (b) $3^3 \times 2$

(c) $6^3 \times 2^3$ (d) $6^3 \times 2$

10. $\sqrt[6]{15}\ \sqrt[2]{56}\ \sqrt[3]{\sqrt{7}}\ \sqrt[2]{2} =$

(a) 0 (b) $\sqrt{2}$

(c) 1 (d) $6\sqrt{2}$

For Rough Work

11. $x^{831} + y^{831}$ is always divisble by

(a) $x - y$ (b) $x^2 + y^2$

(c) $x + y$ (d) none of these

12. Factorize the expression $9x^4 \quad \frac{1}{x^4} \quad 2$.

(a) $3x^2 \quad \frac{1}{x^2} \quad 2 \quad 3x^2 \quad \frac{1}{x^2} \quad 2$

(b) $3x^2 \quad \frac{1}{x^2} \quad 2 \quad 3x^2 \quad \frac{1}{x^2} \quad 2$

(c) $3x^2 \quad \frac{1}{x^2} \quad 2 \quad 3x^2 \quad \frac{1}{x^2} \quad 2$

(d) $3x^2 \quad \frac{1}{x^2} \quad 2 \quad 3x^2 \quad \frac{1}{x^2} \quad 2$

13. The square root of $(xy + xz - yz)^2 - 4xyz\ (x-y)$ is-

(a) $xy + yz - 2xyz$ (b) $x + y - 2xy$

(c) $xy + 3 - y$ (d) $xy + yz - zx$

14. In and ordered pair, satisfying the equations $x + y = 7$ and $3x - 2y = 11$, is also satisfies the equation $3x + py - 17 = 0$, then the value of p is-

(a) 2 (b) -2

(c) 1 (d) 3

15. A bus conductor gets a total of 220 coins of 25 paise, 50 paise & Rs. 1 daily. One day he got Rs. 110 and next day he got Rs. 80 in that the number of coins of 25 paise and 50 piase coins are interchanged then find the total number of 50 paise coins and 25 paise coins

(a) 180 (b) 190

(c) 160 (d) 200

16. The number of ordered pair of different prime numbers whose sum is not exceeding 26 and difference between second number and first number cannot be less 10.

(a) 8 (b) 9

(c) 10 (d) 11

17. A square and an equilateral triangle have equal perimeters. If the diagonal of the square is $12\sqrt{2}$ cm, then area of the triangle is

(a) $24\sqrt{2}$ cm^2 (b) $24\sqrt{3}$ cm^2

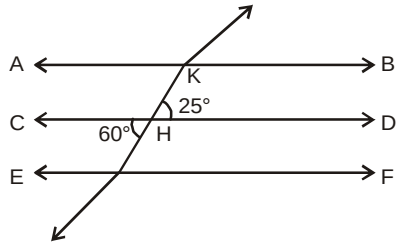
(c) $48\sqrt{3}$ cm^2 (d) $64\sqrt{3}$ cm^2

18. The lengths of the sides of ΔABC are consecutive integers. It ΔABC has the same perimeter as an equilateral triangle with a side of length 9cm, what is the length of the shortes side of ΔABC?

(a) 4 (b) 6

(c) 8 (d) 10

19. In fig., AB || CD || EF and GH || KL. The measure of $\angle HKL$ is



(a) 85° (b) 135°

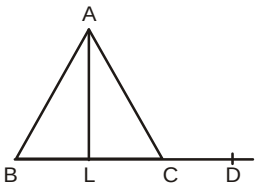
(c) 145° (d) 215°

20. ABCD is a parallelogram in which $\angle DAO = 40°$, $\angle BAO = 35°$ and $\angle COD = 65°$ then $\angle ODC$ =

(a) 80° (b) 105°

(c) 25° (d) none of these

21. The side BC of ΔABC is produced to D. The bisector of $\angle A$ meets BC in L. then the value of $\angle ABC + \angle ACD$ is

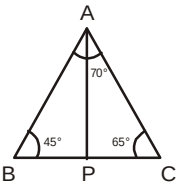


For Rough Work

(a) $2\angle ALC$ (B) $\angle ALC$

(c) $\frac{ALC}{2}$ (d) none of these

22. In ΔABC, if $\angle B = 45°$, $\angle C = 65°$ and the bisector of $\angle BAC$ meets BC at P then the ascending order of sides is



(a) AP, BP, CP (b) AP, CP, BP

(c) BP, AP, CP (d) CP, BP, AP

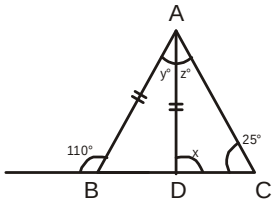
23. If $(b + c - a)\, x = (c + a - b)\, y = (a + b - c)\, z = 2$, then find the value of

$$\frac{1}{y}\ \frac{1}{z}\ \frac{1}{z}\ \frac{1}{x}\ \frac{1}{x}\ \frac{1}{y}$$

(a) $\frac{1}{x}\ \frac{1}{y}\ \frac{1}{z}$ (b) xyz

(c) $\frac{2xy}{x\ y\ z}$ (d) x y z

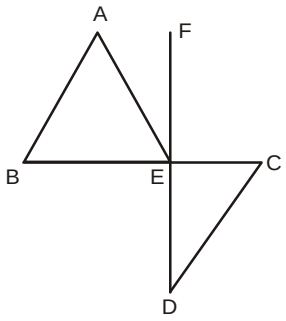
24. In the given fig. find $\angle Z$: -



(a) 40° (b) 110°

(c) 45° (d) none of these

25. In the given fig., AB || CD, $\angle ABC = 65°$, $\angle CDE = 15°$ & AB = AE find $\angle AEF$.



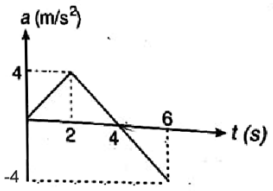
(a) 35°

(b) 45°

(c) 65° (d) 55°

PART-II (SCIENCE)

26. a-t graph for a particle moving in straight line is as shown in fig. change in velocity of a particle from t = 0s to t = 6s.



(a) 10m/s (b) 4m/s

(c) 12m/s (d) 8m/s

27. For maximum range of a projectile angle of projection should be

(a) 45° (b) 30°

(c) 60° (d) none of these

28. A train accelerates from rest at a constant rate a_1 for a distance x_1 in time t_1. After that it retards to rest at constant rate a_2 for distance x_2 in time t_2. Which of the. Following relation is correct?

(a) $\frac{x_1}{x_2}\ \frac{a_1}{a_2}\ \frac{t_1}{t_2}$ (b) $\frac{x_1}{x_2}\ \frac{a_2}{a_1}\ \frac{t_1}{t_2}$

For Rough Work

(c) $\frac{x_1}{x_2}\ \frac{a_1}{a_2}\ \frac{t_2}{t_1}$ (d) $\frac{x_1}{x_2}\ \frac{a_2}{a_1}\ \frac{t_2}{t_1}$

29. A ball is droped freely from 80 m high builging at the same time another ball is thrown vertical upward with initial velocity u m/s. If they meet in 4s then u is ?

(a) 20 m/s (b) 10 m/s

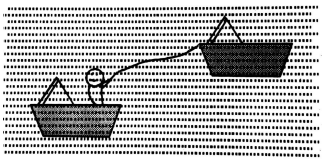
(c) 40 m/s (d) none of these

30. A police jeep is chasing a culprit going on a motorbike. Motor bike crosses a turning at A speed of 72km/h. the jeep follows it at a speed of 90 km/h crossing the turning 10 second later than the bike. Assuming that they travel at constant speeds how far From the turning will the jeep catch up with bike?

(a) 2km (b) 1.2km

(c) 1km (d) none of these

31. A rope is stretched between two boats at rest . A sailor in the boat pulls the rope With a constant force F . first boat with the sailor has mass 250 kg whereas mass of second boat is 500kg. if acceleration of first boat is a_1 and that of second boat is a_2. then



(a) $a_1 = a_2$

(b) $a_1 < a_2$

(c) $a_1 > a_2$

(d) none of these

32. Select the correct statement

(a) friction force is an electromagnetic force

(b) friction force is conservative in nature

(c) Gravitational force is non conservative force

(d) none of these

33. If a body is in equilibrium then

(a) net force on the body is zero only

(b) net torque on the body is zero only

(c) both (a) and (b)

(d) none of these

34. A small ball of m is moving with constant velocity v_1 collides with an identical ball In rest elastically (assuming there is head on collision) the second ball moves with Constant velocity v_2. Then

(a) $V_1 = V_2$ (b) $V_1 < V_2$

(c) $V_1 > V_2$ (d) none of these

35. If position of particle is proportional to t^3 where t is time. then acceleration of the particle

(a) is independent on t

(b) varies linearly

(c) is proportional to t^2

(d) none of these

36. Rocket works on

(a) conservation of angular momentum

(b) conservation of linear momentum

(c) conservation of energy

(d) none of these

37. A ball is made of material of density ρ where $\rho_{oil} < \rho < \rho_{water}$ water where ρ_{oil} and ρ_{water} representing. Density of oil and water respectively. the oil and water are immiscible if the ball is in Equilibrium. Which of the following pictures represents its equilibrium position.

(a) 

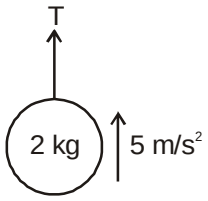
(b) 

For Rough Work

(c) 

(d) 

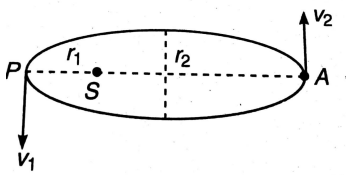
38. A block of mass 2 kg is moving upward with acceleration 5 m/s^2 with help of a light string. Then tension in string is (take g = 10 m/s^2)



(a) T = 20 N (b) T = 30 N
(c) T = 10 N (d) none of these

39. Rotation of earth doesn't affect acceleration due to gravity at
(a) pole (b) equator
(c) any place between pole and equator
(d) none of these

40. A and P denotes positions of a planet moving around sun as shown in fig. If V represents velocity and r represents distance between planet to sun then.



(a) $v_1 > v_2$ (b) $v_1 < v_2$
(c) $v_1 = v_2$ (d) none of these

41. Which of the following material fall in category of a pure substance?
(a) Wood (b) Air
(c) Milk (d) Ice

42. Which of the following is mixture?
(a) Calcium carbonate (b) Carbon dioxide
(c) Blood (d) Methane

43. Which of the following is heterogenous mixture?
(a) Soda (b) Wood
(c) Air (d) Filtered tea

44. Size of particle in suspension is-
(a) Less than10^{-10} m
(b) More than 10^{-10} m and less than 10^{-9} m
(c) More than 10^{-9} m
(d) None of these

45. Which separation tecniques will apply for the separation of the small pieces of metal in the engine oil of car?
(a) Chrematography (b) Centrifugation
(c) Separating funnel (d) Sublimation

46. Which of the following is not constituent of gun powder?
(a) Sulphur (b) Phosphorous
(c) Charcol (d) Potassium nitrate

47. Benzene can be separated from aniline by-
(a) Chromatography (b) Evaporation
(c) Filteration (d) Fractional distillation

48. Which among the following substances has the strongest intermolecular forces of attraction?
(a) Steam (b) Bromine
(c) Oxygen (d) HCl gas

49. Identify the odd one among the following w.r.t. tensile strength as well as ductility.
(a) Gas carbon (b) Diamond
(c) Graphite (d) Carbon fibre

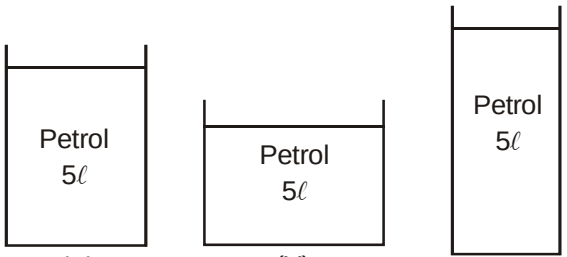
50. Gases form homogeneous mixture due to their-
(a) Diffusibility
(b) High compressibility
(c) Expansibility
(d) Low density

For Rough Work

51. Lime water is_____.
    (a) Mixture (b) Element
    (c) Compound (d) All of the above

52. For the separation of the component of a mixture of iodine, iron fillings and saw dust, arrange the processes in sequential order.
    I. The mixture is covered with an inverted funnel. The outside surface of funnel is wrapped with a moist filter paper and mixture is gently heated. Iodine is seprated.
    II. A strong bar magnet is moved through the mixture. Iron fillings are seperated.
    III. Saw dust is left after iodine separated.
    IV. The mixture is exposed to wind to remove saw dust.
    (a) II, I, III (b) IV, II, I
    (c) IV, III, I (d) I, IV, III

53. Identify the false statement among the following-
    (a) Compound is homogeneous in nature
    (b) In compound constituents do not retain their properties
    (c) The constituents of a mixture can be separated by physical method
    (d) During formation of mixtures, there is a change in the molecular composition

54. 

    X, Y and Z containers are placed 25°C. Then rate of evaporation is more in_____.
    (a) X (b) Y
    (c) Z (d) Cannot be predicted

55. **Assertion :** Washing soda (Na_2CO_3) is a compound.
    Reason : Sodium retains its property in washing soda.
    (a) Both Assertion and Reason are true and Reason is correct xplanation of Assertion
    (b) Both Assertion and Reason are true and Reason is not correct explanation of Assertion
    (c) Assertion is true and Reason is false
    (d) Assertion is false but Reason is true

56. Which of these in the quickest source of energy?
    (a) sugars (b) starch
    (c) proteins (d) fats

57. Which of the following is not a pollutant unless present in excess?
    (a) SO_2 (b) CO_2
    (c) CO (d) NO_2

58. Which of these methods does not result in conservation of water?
    (a) drip irrigation (b) recycling of water
    (c) cutting vegetation so that less water is lost by transpiration
    (d) planting more trees

59. Non-renewable resources
    (a) can never be replaced once they get used up
    (b) can be replaced but the time of replacement varies from a few hundred to millions of years
    (c) can be replaced in 50-100 years
    (d) can be replaced in 100-200 years

60. How much of the earth's surface is coverd with water?
    (a) about 2/3rd (b) about 3/4th
    (c) exactly 3/4rd (d) about 1/4th

61. Pure water is
    (a) an element (b) a compound
    (c) a mixture (d) none of the above

For Rough Work

62. The pure water is
(a) colourless
(b) tasteless and without any smell
(c) transparent (d) all of the above

63. Water can dissolve
(a) solids only
(b) solids and liquids only
(c) solids, liquids and gases
(d) liquids only

64. Which level of organization consists of the biotic and abiotic components in a certain place?
(a) population (b) community
(c) biosphere (d) ecosystem

65. At each higher level of organisation, the number of units.
(a) reduces
(b) increases
(c) remain the same
(d) may increases or reduces

66. Which of these are autotrophs?
(a) all plants (b) unicellular organism
(c) all animals (d) green plants

67. Which of these is not a part of nutrition?
(a) Digestion (b) Absorption
(c) Excretion (d) Egestion

68. Which organ produces bile?
(a) pancreas (b) stomach
(c) liver (d) gall bladder

69. When you feel your pulse, what you actually feel is blood rushing through the
(a) Arteries (b) veins
(c) capillaries (d) all of these

70. Which animal has mantle cavity & shell?
(a) Echinoderms
(b) Molluscs
(c) Platyhelminthes
(d) mammals

PART-III (REASONING)

71. 6, 15, 35, 77, 143, x
(a) 171 (b) 181
(c) 191 (d) 221

72. If in a certain code language
'col tip mot' means 'singing is appreciable;
'mot baj min' means 'dancing is good;
'tip nop baj' means 'singing and dancing;
which of the following means 'good' in that language
(a) not (b) min
(c) baj (d) CND

73. In morning sobhit cover 10 m and turn to his right and covers 4 m then the turn in his left and covers 4 mtr. At this time his shadow in his left. Then in which direction he started his journey?
(a) North East (b) North
(c) South (d) East

74. One morning mohan and gaurav were standing opposite to each other. Mohan's shadow fell exactly on his left. Toward which direction does gorav facing.
(a) south (b) north
(c) west (d) CND

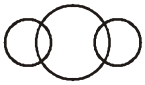
75. At what time between 3 and 4'o clock is the minute hand 4 mins behind the hour hand?
(a) 3 : 10 (b) 3 : 12
(c) 3 : 15 (d) 3 : 30

76. If 10 Jan 2004 is on saturday then what was the day on 20 march 2016.
(a) sunday (b) tuesday

For Rough Work

(c) monday (d) thursday

77. Cats, Pets, Dogs

(a)  (b) 

(c)  (d) 

78. If BUG = 90, ALMS = 180. Then how will CADET is coded?

(a) 185 (b) 165

(c) 90 (d) 145

79. Pointing to a man, a woman says. His mother is the wife of grandfather of my son. How's man related to woman.

(a) Husband (b) Father

(c) Brother in law (d) Eiether (a) or (c)

Information (Q 80 - 81)

Eight persons U, V, W, X, Y, Z, G and J are sitting around a circular table in which some of them are facing the centre other are facing outside the centre. V is sitting third to the left of J. J is facing towards the centre. Z is sitting second to the right of V. Y is sitting second to the left of X. X is not an immediate neighbour of V or J. Both the immediate neighbour of W faces outside. U is not immediate neighbour of J. Both the immediate neighbour of U faces opposite directions. Both the immediate neighbours of X faces the same direction as that of Z. U faces the same direction as that of V.

80. How many persons are facing outside the centre as per above arrangement?

(a) 1 (b) 2

(c) 5 (d) 4

81. What is the position of U with respect to J?

(a) Third to the left

(b) Third to the right

(c) second to the left

(d) Fifth to the left

82. Statement :- Some A are B

No B is C

Conclusion :- (1) Some A are not C

(2) Some A are C.

(a) Only (1) follows

(b) Only (2) follows

(c) both (1) and (2) follows

(d) Niether (1) nor (2) follows

83. $I \leq J = K$, $N > M \leq L = K$

Conclusion : (i) $I > N$ (ii) $I \leq N$

(a) Only (i) follows

(b) Only (ii) follow

(c) Neither (i) nor (ii) follows

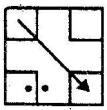
(d) Either (i) or (ii) follows

84. Choose the odd one out

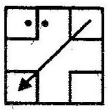
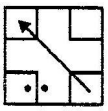
(a) 14, 12 (b) 24, 7

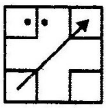
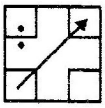
(c) 37, 4 (d) 42, 4

85. Which of the following figure is correct water image of X.

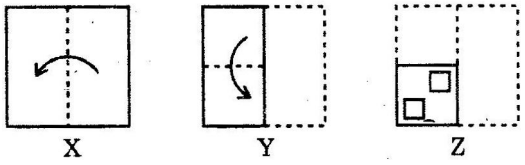


(X)

(a)  (b) 

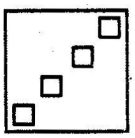
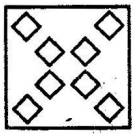
(c)  (d) 

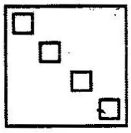
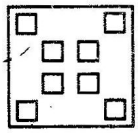
86. Fold & Cut the figure according to given data.



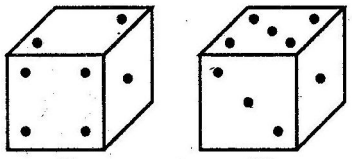
X Y Z

For Rough Work

(a)  (b) 

(c)  (d) 

87. Two positions of a cube are shown below. When the number 4 will be at the bottom, then which number will be at the top?



(a) 3 (b) 5
(c) 6
(d) Cannot be determined

Directions : Q. 88 to Q. 90

88. B, M, T, R, K, H and D are travelling in a train compartment with III-tier sleeper berth. Each of them has a different profession of Engineer, Doctor, Architect, Pharmacist, Lawyer, Journalist and Pathologist. They occupied two lower berths, three middle berths and two upper berths. B, th Engineer, is not on the upper berth. The Architect is the only other person who occupies the same type of berth as that of B. M and H are not on the midddle berth and their professions are Pathologist and Lawyer respectively. T is a Pharmacist. D is neither a Journalist nor an Architect. K occupies the same type of berth as that of the Doctor.

88. Who is the Architect?
(a) D (b) H
(c) R (d) Data inadequate

89. What is D's profession?
(a) Pharmacist (b) Lawyer
(c) Doctor (d) Engineer

90. Which of the following pairs occupy the lower berth?
(a) BT (b) BD
(c) BK (d) None of these

❑ ❑ ❑

For Rough Work