ASAT

(ALLEN Scholarship Cum Admission Test)

For

PRE-NURTURE & CAREER FOUNDATION : CLASS-IX

(For VIII to IX Moving Students)

SAMPLE TEST PAPER

Time : 2 Hrs.   **Maximum Marks : 300**

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

INSTRUCTIONS

1. The booklet is your Question Paper. Do not break the seal of this booklet before being instructed to do so by the invigilator.

2. Blank spaces and blank pages are provided in the question paper for your rough work. No additional sheets will be provided for rough work.

3. Blank papers, clipboards, log tables, slide rules, calculators, cameras, cellular phones, pagers and electronic gadgets are **NOT** allowed inside the examination hall.

4. The answer sheet, a machine-readable Optical Response Sheet **(ORS)**, is provided separately.

5. On breaking the seal of the booklet check that it contains **17** pages and all the **75** questions.

6. A candidate has to write his / her answers in the ORS sheet by darkening the appropriate bubble with the help of **Black ball point pen** as the correct answer of the question attempted.

7. **Question Paper Format :**

   The question paper consists of **2 parts. Part-I : IQ** (Mental Ability) & **Part-II :** Physics, Chemistry, Biology & Mathematics

8. **Marking Scheme :**

   Part-I : For each question of **Part-I**, you will be awarded **4 marks** if you darken the bubble corresponding to the correct answer and **zero mark** if no bubbles are darkened. **No negative** marks will be awarded for incorrect answers in this part.

   Part-II : For each question of **Part-II**, you will be awarded **4 marks** if you darken the bubble corresponding to the correct answer and **zero mark** if no bubbles are darkened. **No negative** marks will be awarded for incorrect answers in this part.

PART - I
IQ (MENTAL ABILITY)

This section contains **20 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

1. Four persons stationed at the four corners of a square piece as shown in the diagram. B starts crossing the field diagonally. After walking half the distance, he turns right, walks some distance and turns left. Which direction is B facing now?
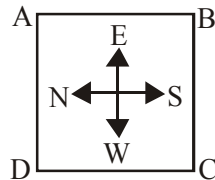

(1) North-East   (2) South-East   (3) North-West   (4) North

2. Five cities A, B, C, D and E are famous for their lovely gardens, fancy jewellery, educational institutes, blue pottery and scents but not in the same order and one city is famous for only one feature.

(i) A and C are neither educational centres nor have gardens.

(ii) B and E are not famous for jewellery or pottery.

(iii) Scents and jewellery have nothing to do with A.

(iv) D and E are not famous for gardens and jewellery.

(v) D is not famous for educational institutes.

City E is famous for which of the following features?

(1) Jewellery   (2) Educational institutes

(3) Scents   (4) Gardens

3. Which two months in a year have the same calendar ?

(1) April, July   (2) April, August   (3) June, October   (4) October, December

4. Arrange the words given below a meaningful sequence.

1. Puberty   2. Adulthood   3. Childhood

4. Infant   5. Adolescence

(1) 2, 4, 3, 1, 5   (2) 5, 2, 3, 4, 1   (3) 4, 3, 2, 1, 5   (4) 4, 3, 1, 5, 2

SPACE FOR ROUGH WORK

5. Latika delivers bottled water to stores in Delhi. She delivers to MTG's Bookstore every 6th day and to Sammy's Bookstore every 9th day. On Thursday the 4th, she will deliver water to both of these stores. How many days after that will she deliver to both stores on the same day again?

S	M	T	W	T	F	S
	1	2	3	MTG's & Sammy's 4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

(1) 17   (2) 18   (3) 19   (4) 16

6. The underlined letters indicate the end of the first word and beginning of second word. Choose the correct option.

E X (____) A C L E

(1) PERT   (2) TANT

(3) TENT   (4) ENCE

7. In the following questions, which one of the four interchanges of signs as well as in number in left hand side would make the given equation correct

$(3 \div 4) + 2 = 2$

(1) + and ÷, 3 and 4

(2) + and ÷, 2 and 4

(3) + and ÷, 2 and 3

(4) No interchange, 3 and 4

8. Which one of the following Venn diagrams correctly illustrates the relationship among the classes : Diseases, Leprosy, Scurvy ?
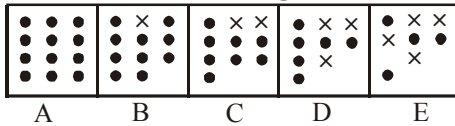
(1)   (2)   (3)   (4)
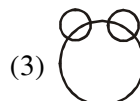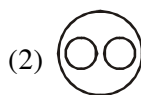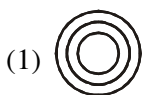
SPACE FOR ROUGH WORK

9. Find the missing term which will replace the question mark.

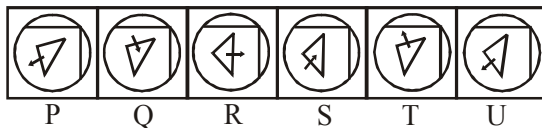| 13	4	165
3	2	7
?	11	14

(1) 25   (2) 7   (3) 5   (4) 2

10. Select the related number from the given options.

5 : 100, 4 : 64 : : 4 : 80, 3 : ?

(1) 26   (2) 48   (3) 60   (4) 54

11. Select a figure from amongst the figures (1), (2), (3) and (4) which will continue the series as established by the five problem figures.
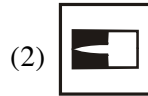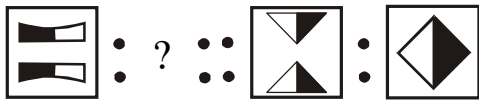
Problem Figure

A   B   C   D   E

12. Find the odd one amongst the set of figures of a series.

P   Q   R   S   T   U

(1) Q   (2) R   (3) T   (4) U

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13. Which of the following completes the first pair in the same way as the second pair ?

(1)   (2)   (3)   (4)

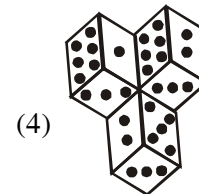**14.** A clock seen through a mirror shows quarter to three. The correct time shown by the clock's_____.
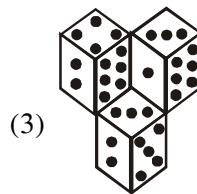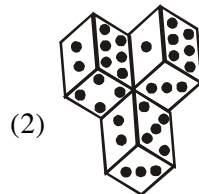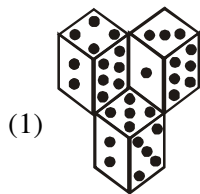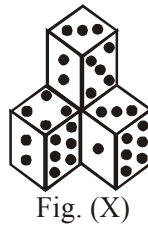
(1) 8 : 15   (2) 9 : 12   (3) 8 : 17   (4) 9 : 15

15. Choose the correct water-image of the figure (X) from the given options.

Fig. (X)

(1)   (2)   (3)   (4)

Direction (Q.16 & Q.17) :- Answer the questions based on the following information :

(i)   A + B means A is the mother of B.
(ii) A – B means A is the sister of B.
(iii) A * B means A is the father of B.
(iv) A π B means A is the brother of B.

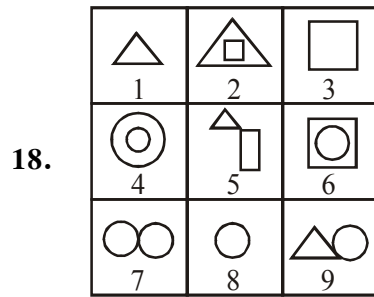**16.** Which of the following means Q is the grandfather of P ?

(1) P + N * M * Q   (2) Q * N * M + P   (3) Q π M π N * P   (4) Q * N * M – P

17. Which of the following means that N is the maternal uncle of M ?

(1) N – Y + A π M   (2) N π P – L + E – M (3) M – Y * P – N   (4) N π C + F * M
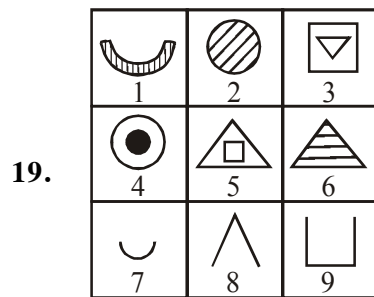
SPACE FOR ROUGH WORK

Direction (Q.18 to Q.20) :- In each of the following questions, group the given figures into three classes using each figure only once.

18.

(1) 2, 4, 6; 3, 7, 9; 1, 5, 8   (2) 1, 4, 8; 2, 3, 6; 5, 7, 9

(3) 1, 3, 8; 2, 4, 6; 5, 7, 9   (4) 2, 4, 5; 1, 3, 7; 5, 8, 9

19.

(1) 1, 2, 6; 3, 4, 5; 7, 8, 9   (2) 1, 2, 9; 3, 4, 6; 5, 7, 8

(3) 1, 4, 7; 2, 6, 9; 3, 5, 8   (4) 2, 7, 9; 1, 5, 6; 3, 4, 8

20.
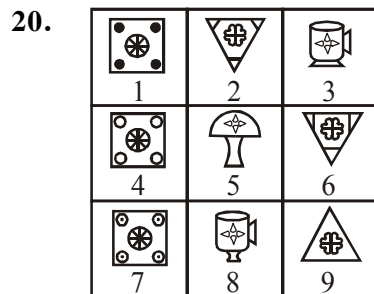
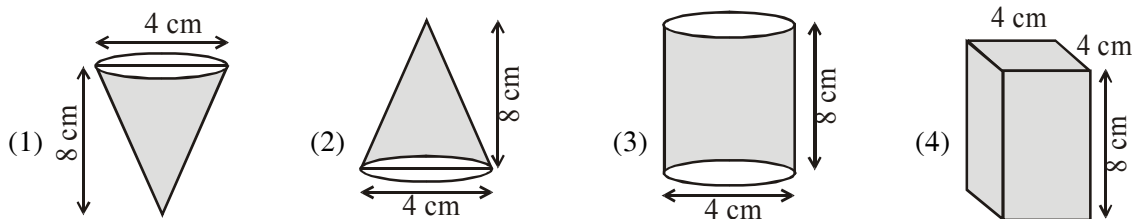(1) 1, 4, 7; 2, 6, 9;3, 5, 8   (2) 1, 5, 7; 2, 6, 9; 3, 4, 8

(3) 1, 6, 9; 2, 4, 7; 3, 5, 8   (4) 1, 4, 7; 3, 6, 9; 2, 5, 8

SPACE FOR ROUGH WORK

PART - II
SECTION-A : PHYSICS

This section contains **11 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

21. Which of these objects exerts the most pressure on the floor? (All objects have the same mass).

22. A student riding a bicycle observes that it moves faster on a smooth road than on a rough road. This happens because the smooth road has

(1) less gravity   (2) more gravity   (3) less friction   (4) more friction

23. Which of these is an electrolyte ?

(1) $AgNO_3$ solution   (2) Alcohol   (3) Mercury   (4) Sugar solution

24. The intensity of earthquake is measured on the

(1) Richter scale   (2) Kelvin scale   (3) Mercury scale   (4) Fahrenheit scale

25. The tail of a comet points

(1) Towards the Sun   (2) Away from the Sun

(3) In arbitrary direction   (4) Away from the Earth

26. Which one of the following materials will reflect sound the best ?

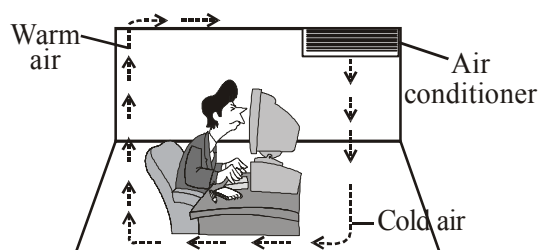(1) Thermocol   (2) Curtain made from cloth

(3) Steel   (4) Paper

**27.** Image formed on retina is

(1) Virtual and erect   (2) Real and erect   (3) Real and inverted   (4) Virtual and inverted

SPACE FOR ROUGH WORK

28. Figure below shows an air conditioner used to cool a room. By which mode of transfer of heat does the air conditioner cool the room ?

(1) Conduction   (2) Radiation   (3) Convection   (4) Any of the above

29. During a cyclone, air moves from

(1) Region of high pressure to low pressure   (2) Region of low pressure to high pressure

(3) Region of high velocity to low velocity   (4) Region of high pressure to low velocity

30. A key of a mechanical piano is struck gently and then struck again but much harder this time. In the second case,

(1) both loudness and pitch will remain unaffected

(2) sound will be louder and pitch will also be higher

(3) sound will be louder but pitch will be lower

(4) sound will be louder but pitch will not be different

31. Two plane mirrors AB and CD are placed at right angle to one another. A ray of light PQ hits AB at Q making an angle of 45° as shown in the diagram. This ray will be reflected from mirror CD at an angle of _____ with the mirror.
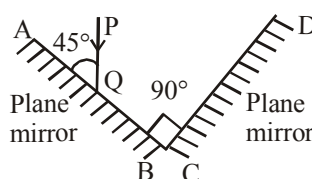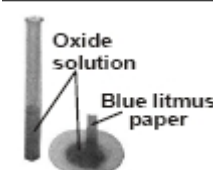

(1) 20°   (2) 35°   (3) 45°   (4) 60°

SPACE FOR ROUGH WORK

SECTION-B : CHEMISTRY

This section contains **12 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

32. Removing the wool from a sheep is called

(1) sericulture   (2) shearing

(3) spuning   (4) ginning

33. Pollution is controlled by

(1) Banning atomic blasts   (2) Use of electrically operated automobiles

(3) Sewage treatment   (4) All of the above

34. DDT is

(1) Green house gas   (2) Degradable pollutant

(3) Nondegradable pollutant   (4) None of these

35. The slow process of conversion of dead vegetation into coal is called

(1) Carbonylation   (2) Carboxylation

(3) Carbonisation   (4) Carbonation

36. Why is it not advisable to wear synthetic clothes while bursting fire crackers?

(i) All synthetic fibres are prepared by using raw materials of petroleum origin.

(ii) Synthetic fibres catch fire easily.

(iii) On heating, synthetic fibres melt and stick to the body of the person wearing it.

(1) (i) Only   (2) (ii) Only

(3) (i) and (iii)   (4) (ii) and (iii)

37. Samples of four different oxides were taken and dissolved in water separately to form the respective oxide solution. The four solutions were then tested for their acidic/basic nature. When dissolved in water, which of the following oxides, is likely to turn blue litmus red ?

(1) SO_2

(2) MgO

(3) Fe_2O_3

(4) CaO

38. Which of the following are the constituents of petroleum?

(1) Diesel, paraffin   (2) CNG, coal tar

(3) Coal tar, bitumen   (4) Kerosene, coal gas

SPACE FOR ROUGH WORK

39. Match the phrases of column A correctly with the terms given in column B and select the correct match from the codes given below.

	Column -A		Column- B
(a)	Prepared by using wood pulp	(i)	Polyester
(b)	Used for making parachutes and stockings	(ii)	Teflon
(c)	Used to make nonstick cookwares	(iii)	Rayon
(d)	Fabrics do not wrinkle easily	(iv)	Nylon

(1) (a) - (i), (b) - (iii), (c) - (iv), (d) - (ii)

(2) (a) - (iii), (b) - (iv), (c) - (ii), (d) - (i)

(3) (a) - (ii), (b) - (iii), (c) - (i), (d) - (iv)

(4) (a) - (iii), (b) - (ii), (c) - (iv), (d) - (i)

40. Which of the following pollutants is/are considered as marble cancer?

(i) Sulphur dioxide

(ii) Carbon monoxide

(iii) Nitrogen dioxide

(iv) Chlorofluorocarbons

(1) (i), (ii) and (iii)   (2) (i) and (iii)   (3) (ii) and (iv)   (4) All of these

41. Reactivity order of the above mentioned metals is_____

(1) Sodium > Magnesium > Zinc > Iron > Copper

(2) Sodium > Magnesium > Iron > Copper > Zinc

(3) Sodium > Magnesium > Zinc > Copper > Iron

(4) Sodium > Magnesium > Copper > Iron > Zinc

42. Eutrophication is caused due to the presence of excessive

(1) Nitrates in water   (2) Phosphates in water

(3) Both (1) & (2)   (4) None of these

43. The process of separation of broken woody pieces from fibres is called

(1) ginning   (2) retting   (3) spinning   (4) scutching

SPACE FOR ROUGH WORK

SECTION-C : BIOLOGY

This section contains **15 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

44. The organic manure is considered better than fertilisers because

(1) It enhances the water holding capacity of the soil

(2) It makes the soil porous due to which exchange of gases becomes easy

(3) It improves the texture of the soil

(4) All of these

45. The features which help to distinguish the male from the female are called

(1) Sex chromosomes   (2) Primary sexual characters

(3) Secondary sexual characters   (4) All of these

46. Sperms in male are produced in

(1) testes   (2) urethra   (3) epididymis   (4) penis

47. Ribosomes are the centre for

(1) Respiration   (2) Photosynthesis

(3) Protein synthesis   (4) Fat synthesis

48. If the nucleus is a cell's "control centre" and chloroplasts its "solar collectors". Which of the following might be called the cell's combination "food processor" and "garbage disposer"?

(1) Lysosome   (2) Ribosome

(3) Golgi apparatus   (4) Nucleolus

49. Given below are some possible reasons for a sharp decline in population of the species given in figure. Which of the following are correct ?

(i) Cleared forests   (ii) Flooded large areas

(iii) Polluted air and water   (iv) Scarcity of food

(1) (i) and (ii)   (2) (i) and (iv)   (3) (i), (ii) and (iv)   (4) (i), (ii), (iii) and (iv)

SPACE FOR ROUGH WORK

50. The process of release of ovum by the respective ovary is called as

(1) Ovulation   (2) Menstruation   (3) Menarche   (4) Menopause

51. Select the correct option which best suits the given descriptions for P, Q, R & S.

P – A simple tool used for removing weeds

Q – A tool which is used for ploughing with the help of tractor

R – A tool which is used for sowing with the help of tractor

S – A simple tool used for cutting of crops

|	P	Q	R	S
(1)	Sickle	Plough	Cultivator	Khurpi
(2)	Sickle	Cultivator	Hoe	Cutter
(3)	Khurpi	Plough	Seed drill	Hoe
(4)	Hoe	Cultivator	Seed drill	Sickle

52. The function of the nucleolus in the cell is

(1) Secretory   (2) Synthesis of DNA

(3) Synthesis of RNA and ribosomes   (4) None of these

53. Suvarna prepared maida dough by taking ½ kg flour to which she added some sugar, mixed with warm water and at the end added a small amount of yeast powder. After two hours, she observed that the dough got raised. Which of the following is correct regarding this?

(1) Flour undergoes fermentation that results in raised dough.

(2) Yeast reproduces rapidly in number which increase volume of the dough.

(3) Yeast produces carbon dioxide during fermentation that fills the dough and increases its volume.

(4) Water vapour formed from warm water raises the volume of the dough.

54. In which of the following agricultural methods, the nutrient needs of one crop are fulfilled by the other crop ?
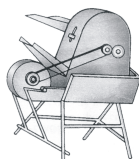
✳ = Pea   ● = Rice

♦ = Wheat   ❖ = Soyabeans
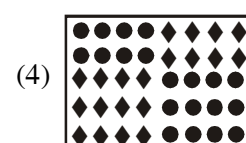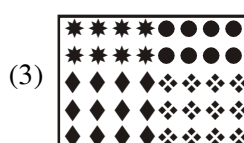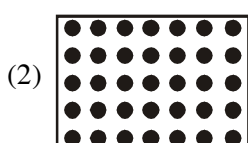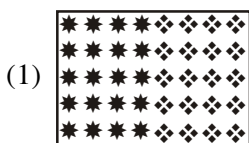
SPACE FOR ROUGH WORK

55.

a   b   c   d

Which of the following is the correct sequence of use of the above given tools and technique in the agricultural practices?

(1) a, b, c, d   (2) d, c, b, a   (3) d, b, a, c   (4) c, a, d, b.

56. A habitat change may result in the decline of the numbers of a given species. Such species slowly become P. This means that the species are on the verge of becoming Q. Some animals whose number has gone down to critically low levels are called R. A species is considered S when no member of the species is still alive.

Which of the following is correct sequence for P, Q, R and S in the above paragraph.

	P	Q	R	S
(1)	Vulnerable	Endemic	Extinct	Endangered
(2)	Endangered	Vulnerable	Threatened	Extinct
(3)	Vulnerable	Endangered	Critically endangered	Extinct
(4)	Endangered	Critically endangered	Extinct	Vulnerable

57. Megha and Firoz were performing an experiment on plant reproduction. They both placed a potato in the soil and observed the changes after few days. Which of the following will they observe?
(1) Young roots will rise from the potato   (2) Young shoots will rise from the potato
(3) Potato will increase in number   (4) Both (1) & (2)

58. How can plants prevent self pollination ?
(1) Stamen and pistil mature at different times.
(2) Plants should develop bisexual flowers.
(3) Pistil should have increased receptivity for pollens from same plant.
(4) All of these.

SPACE FOR ROUGH WORK

SECTION-D : MATHEMATICS

This section contains **17 multiple choice questions**. Each question has four choices (1), (2), (3) and (4) out of which **ONLY ONE** is correct.

59. Mr. Valdez plans to open a savings account. The annual interest rates offered by 3 banks are shown below.

$$2\frac{1}{2}\%,\ 2\frac{4}{5}\%,\ 2\frac{2}{3}\%$$

Which list shows these interest rates in order from greatest to least?

(1) $2\frac{1}{2}\%,\ 2\frac{2}{3}\%,\ 2\frac{4}{5}\%$

(2) $2\frac{4}{5}\%,\ 2\frac{1}{2}\%,\ 2\frac{2}{3}\%$

(3) $2\frac{4}{5}\%,\ 2\frac{2}{3}\%,\ 2\frac{1}{2}\%$

(4) None of these

60. Shanika is making cookies.

• Her recipe calls for 1 cup of sugar for $1\frac{1}{2}$ dozen cookies.

• Shanika wants to make 6 dozen cookies.

How many cups of sugar will she need ?

(1) 3 cups

(2) 7 cups

(3) 4 cups

(4) None of these

61. Rufus has a box with the following cards.

• 3 yellow cards

• 2 red cards

He draws a card at random, replaces it, and draws a second card. What is the probability that both cards are red ?

(1) $\dfrac{1}{10}$

(2) $\dfrac{4}{25}$

(3) $\dfrac{2}{5}$

(4) None of these

SPACE FOR ROUGH WORK

62. The Hendersons are considering buying a house. They recorded mortgage interest rates for a six-month period, as shown in the chart below.

MORTGAGE INTEREST RATES

Month	Interest Rate (in percent)
March	7.8
April	8.0
May	7.75
June	7.6
July	7.25
August	7.5

What was the **mean** mortgage interest rate, in percent, for this six-month period ?

(1) 7.65   (2) 5.27   (3) 3.94   (4) 4.15

63. Chang views the design below in his kaleidoscope. The outside border of the design is a regular octagon.

Angle A →
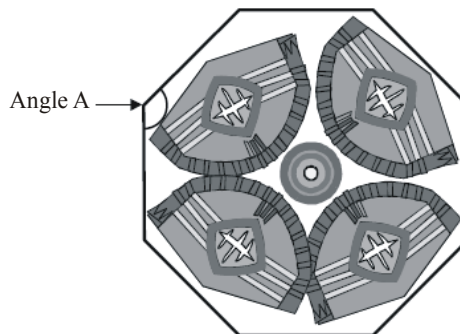
What is the measure, in degrees, of ∠A in the design?

(1) 45   (2) 90   (3) 135   (4) 180

64. What is the value of the expression $2 \times 7^2 - 3 \times 8 + 6 \times 5 + 4$?

(1) 108   (2) 206

(3) 3,834   (4) 6,444

SPACE FOR ROUGH WORK

65. A star's color gives an indication of its temperature and age. The chart below shows seven types of stars and the lowest recorded temperature of each type.
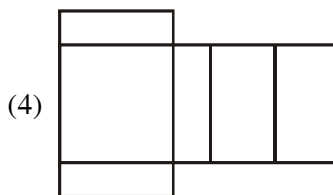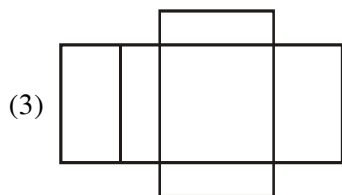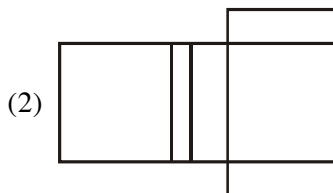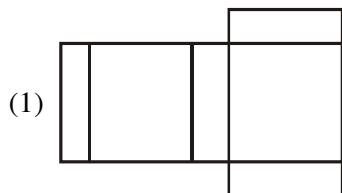
STARS

Type	Lowest Temperature (in Fahrenheit degrees)	Color
A	1.35×10^4	Blue-White
B	2.08×10^4	Blue
F	1.08×10^4	White
G	9.0×10^3	Yellow
K	6.3×10^3	Orange
M	5.4×10^3	Red
O	4.5×10^4	Blue

Which type of star has the lowest temperature?

(1) B (2) G (3) M (4) O

**66.** Tran designed this shipping box for a freight company.
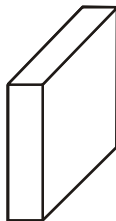
Which of the patterns below could be folded to make the shipping box?

(1)

(2)

(3)

(4)

SPACE FOR ROUGH WORK

67. A used-car dealer needed to sell a car. He priced it at Rs 4500 the first day it was on the lot. The second day he reduced the price by 5%. What was the price of the car after this reduction?

(1) 3700   (2) 4275   (3) 4900   (4) 5400

68. Sabrina enjoys sailing. She wants to build this model sailboat:
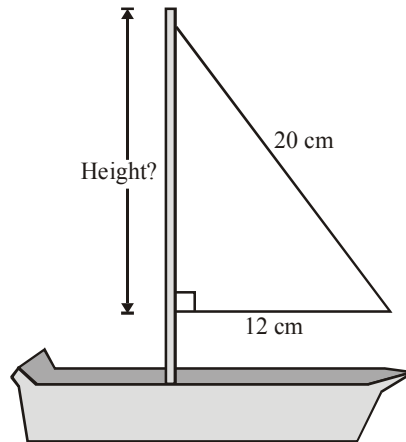
What is the height of the model's sail in centimeters (cm)?

(1) 32   (2) 8   (3) 16   (4) 24

69. On his mathematics test, Carlos had 20 correct out of 25 problems.

Which of the following is NOT another way of expressing 20 out of 25 ?

(1) $\dfrac{4}{5}$ (2) 0.80   (3) 80%   (4) $\dfrac{5}{4}$

70. When Ryan lifts weights for his first set, he lifts 15 pounds less than half of the maximum weight he can lift. This is represented by the equation below, where m represents the maximum weight Ryan can lift, and f represents the weight of his first set.

$$f = \frac{1}{2}m - 15$$

If the weight of Ryan's first set is 135 pounds, what is the maximum weight he can lift?

(1) 52.5 pounds   (2) 60.0 pounds   (3) 285.0 pounds   (4) 300.0 pounds

SPACE FOR ROUGH WORK

71. A plane is flying at an altitude of 27,000 feet. The pilot of the plane is trying to avoid a storm and increases the plane's altitude by ascending 3,500 feet. When the pilot sees he has not ascended far enough to avoid the storm, he ascends another 5,000 feet and finally another 2,500 feet. What is the plane's new altitude?

(1) 11,000 feet

(2) 16,000 feet

(3) 23,000 feet

(4) 38,000 feet

72. James has a rectangular office that measures 6 feet by 10 feet. He will be moving to an office that is 2 feet longer and 2 feet wider. How much more area will James have in his new office ?

(1) 4 square feet

(2) 36 square feet

(3) 60 square feet

(4) 96 square feet

73. The low temperatures (in °C) for 6 consecutive days in a Montana city were 9°, 3°, 4°, 16°, 11°, and 5°. What would the low temperature have to be on the seventh day to have a mean low temperature of 9° for the week ?

(1) 8°   (2) 9°   (3) 15°   (4) 20°

74. Audrey's parents gave her Rs 5 to play video games at the mall. Each game costs a quarter to play. Which choice is NOT a correct method for determining the total number of games she can play?

(1) Take the number of Rs she has and divide it by $\dfrac{1}{4}$

(2) Take the number of Rs she has and multiply it by 4.

(3) Take the number of Rs she has and divide it by 0.25.

(4) Take the number of Rs she has and multiply it by 0.25.

75. The line segments composing both shapes below are all congruent. The perimeter of the triangle is 36 units in length.
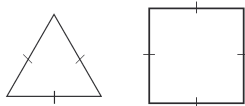
What is the perimeter, in units, of the square?

(1) 35   (2) 48   (3) 24   (4) 50

SPACE FOR ROUGH WORK