TAKSHILA
INSTITUTE ®

Test Code: IX-B

TNTSE SAMPLE PAPER

Takshila's National Talent Scholarship Examination

For Students of Class IX

This Booklet contains 5 Pages

SCIENCE   :   20 QUESTIONS

MATHEMATICS   :   20 QUESTIONS

**REASONING   :   10 QUESTIONS**

General Instructions:

Please do not write anything on question paper.

1. The candidates will use their own ball point pens, HB pencils, erasers etc.

2. Candidates will find out the right answer of the question and will darken the appropriate circle completely with Blue or Black Pen Only.

3. Total No. of Question = 50

4. All questions carry equal marks. Science, Mathematics &Reasoning are compulsory.

5. For each correct Answer = 4 marks, there is no negative marking.

6. Please bring separate sheet for Rough work.

7. Total Time : 1 Hour

8. Maximum Marks : 200

SCIENCE

Q.1 Identify human cells which lack nucleus
(a) WBC
(b) RBC
(c) Platelets
(d) Nerve cells

Q.2 Ripe fruits soften due to :-
(a) Degeneration of cell walls
(b) Partial solubilisation of pectic compounds
(c) Metabolism of tannins
(d) Exosmosis

Q.3 In desert plants, rate of water loss gets reduced due to the presence of:
(a) cuticle
(b) stomata
(c) lignin
(d) suberin

Q.4 Vaccines do not protect us from
(a) Viral diseases
(b) Bacterial disease
(c) Deficiency disease
(d) Small pox

Q.5 The cell wall of fungi is made of a toughcomplex sugar called :
(a) cellulose
(b) plasma membrane
(c) Chitin
(d) both (a) and (b)

Q.6 The most abundant type of antibodies which can also cross placenta, are
(a) IgG
(b) IgM
(c) IgA
(d) IgE

Q.7 Which has maximum number of molecules?
(a) 1g of CO_2
(b) 1 g of N_2
(c) 1g of H_2
(d) 1g of CH_4

Q.8 The physical state of matter which can be most easily compressed –
(a) Liquid
(b) Gas
(c) Solid
(d) None of these

Q.9 A beaker is completely filled with water of 4°C. It will overflow if
(a) Heated above 4°C
(b) Cooled below 4°C
(c) Both heated and cooled above 4°C and below 4°C respectively
(d) None of the above

Q.10 Which of the following is not an element?
(a) Gold
(b) Sodium
(c) Soil
(d) Iron

Q.11 Two substances A and B when bought together from a substance C with the evolution of heat. The properties of C are entirely different from those of A and B. The substance C is
(a) A compound
(b) An element
(c) A mixture
(d) None of the above

Q.12 Mercury and bromine are both
(a) liquid at room temperature
(b) Mercury is liquid but bromine is not
(c) Bromine is liquid but Mercury is not
(d) Both are solids

Q.13 Which of the following methods would you use to separate cream from milk?
(a) Sublimation
(b) Distillation
(c) Centrifugation
(d) Filtration

Q.14 Velocity-time graph AB (fig.) shows that the body has
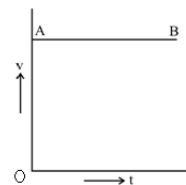
(a) uniform acceleration
(b) uniform retardation
(c) uniform velocity throughout its motion and has zero initial velocity
(d) none of these

Q.15 When a graph between two physical quantities is a straight line, the two quantities are
(a) both constant
(b) independent of each other
(c) directly proportional
(d) inversely proportional

Q.16 A particle is travelling with a constant speed. This means
(a) its position remains constant as time passes
(b) it covers equal distance in equal time Intervals
(c) its acceleration is zero
(d) it does not change its direction of motion

Q.17 A river 4.0 miles wide is following with a speed of 2 miles/hr. The minimum time taken by a boat to cross the river, person with a speed $v = 4$ miles/hr(in still water) is approximately

(a) 0.33 hr   (b) 0.66 hr

(c) 0.50 hr   (d) 0.25 hr

Q.18 A force of 2×10^5 N acts on a body of mass 4×10^4 kg at rest for 10 s. The final velocity of the body is

(a) 5 ms^{-1} (b) 50 ms^{-1}

(c) 150 ms^{-1} (d) 250 ms^{-1}

Q.19 Identify the v - t graph representing uniform velocity.
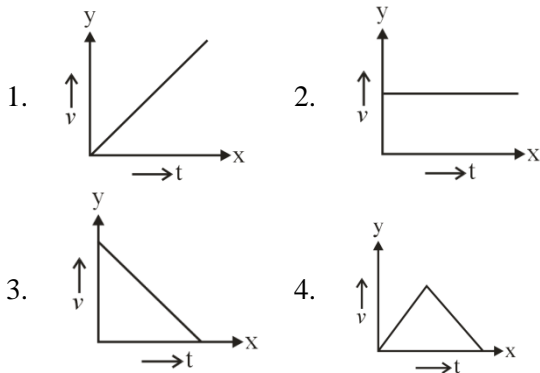
(a) Graph (1)   (b) Graph (2)

(c) Graph (3)   (d) Graph (4)

Q.20 A bullet is fired horizontally and gets embedded in a block kept on a table. If table is frictionless, then

(a) kinetic energy is conserved

(b) momentum is conserved

(c) Both (a) and (b)

(d) None of these

MATHEMATICS

Q.21 The base of a right angled triangle is 5 m and hypotenuse is 13 m. It area will be :

(a) 25 m^2 (b) 28 m^2

(c) 30 m^2 (d) None of these

Q.22 The length of each side of an equilateral triangle having an area of $4\sqrt{3}$ cm^2 is

(a) 4cm   (b) $\dfrac{4}{\sqrt{3}}$

(c) $\dfrac{\sqrt{3}}{4}$ (d) 3 cm

Q.23 The area of a right angle triangle is 30 cm^2 and the length of its hypotenuse is 13 cm. The length of the shorter side is
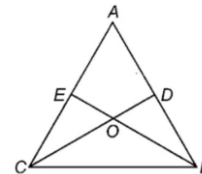
(a) 4 cm   (b) 5 cm

(c) 6 cm   (d) 7 cm

Q.24 The external bisectors of $\angle B$ and $\angle C$ of $\triangle ABC$ meet at point P. if $\angle BAC = 80°$, then $\angle BPC$ is

(a) 50°   (b) 40°

(c) 80°   (d) 100°

Q.25 In the given figure , PQR is an equilateral triangle and QRST is a square . Then $\angle PSR =$ _____.
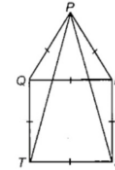
(a) 30°   (b) 15°

(c) 90°   (d) 60°

**Q.26** In the given figure, if AE = AD and BD = CE, then ____.

(a) AB = $\triangle$BEC $\cong$ $\triangle$BDC

(b) $\triangle$AEB $\cong$ $\triangle$ADC

(c) BC = CD

(d) None of these

Q.27 If two parallel lines are intersected by a transversal, then each pair of corresponding angles so formed is :

(a) Equal   (b) Complementary

(c) Supplementary   (d) None of these

Q.28 If the supplement of an angle is three times its complement, then angle is :

(a) 40°   (b) 35°

(c) 50°   (d) 45°

Q.29 If two parallel lines are intersected by a transversal than the bisectors of the interior angles form a :

(a) Rhombus   (b) Parallelogram

(c) Square   (d) Rectangle

Q.30 In the given figure $PQ \parallel RS$, $\angle PAB = 70°$, $\angle ACS = 110°$ then $\angle BAC$ is :
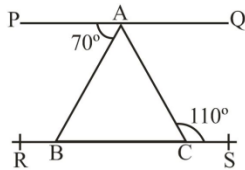
(a) 40° (b) 70°
(c) 110° (d) 30°

Q.31 A line segment when extended indefinitely in one direction is called
(a) Ray (b) Line
(c) Line-segment (d) None of these

Q.32 Pythagoras was a student of
(a) Thales (b) Euclid
(c) Both (d) Archimedes

Q.33 It is known that if $x + y = 10$ then $x + y + z = 10 + z$. The Euclid's axiom that illustrates this statement is :
(a) 1st Axiom (b) 2nd Axiom
(c) 3rd Axiom (d) 4th Axiom

Q.34 Abscissa of all the points on the x-axis is :
(a) 0 (b) 1
(c) any number (d) 2

Q.35 Abscissa of a point is positive in
(a) I and II quadrants (b) I and IV quadrants
(c) I quadrant only (d) II quadrant only

Q.36 When $x^{13} + 1$ is divided by $x + 1$ the remainder is:
(a) –1 (b) 0
(c) 1 (d) 2

Q.37 If $(x - 2)$ is a factor of $(x^2 + 3qx - 2q)$, then the value of q is :
(a) 2 (b) –2
(c) 1 (d) –1

Q.38 The value of $4 - \cfrac{5}{1 + \cfrac{1}{3 + \cfrac{1}{2 + \cfrac{1}{4}}}}$ is :

(a) $\dfrac{40}{31}$ (b) $\dfrac{4}{9}$

(c) $\dfrac{1}{8}$ (d) $\dfrac{31}{40}$

Q.39 In the given figure, AB $\parallel$ CD. Then the value of x is
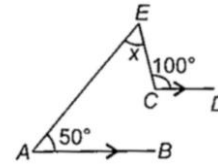
(a) 25° (b) 30°
(c) 45° (d) 50°

Q.40 $(64)^{-\frac{2}{3}} \times \left(\dfrac{1}{4}\right)^{-3}$ equal to

(a) 4 (b) $\dfrac{1}{4}$
(c) 1 (d) 16

REASONING

Q.41 In a certain language CALCUTTA is coded as GEPGYXXE, Which word would be coded as FSQFCE?
(a) BOMBAY (b) BOMYAB
(c) BOBAYM (d) BOMBYA

Q.42 In a certain code, if TREE is coded as 7100, FROG as 2159, how is FREE coded in that code?
(a) 2100 (b) 3100
(c) 1003 (d) 1002

Q.43 Suppose you have a 12- hour digital clock where the number representing the hour is always the same as the number representing the minute. That is, clock can only show times like 8:08, 9:09, 10:10, etc. What is the smallest time difference between two such times?
(a) 101 minutes (b) 61 minutes
(c) 60 minutes (d) 49 minutes

Q.44 A watch reads 4:30. If the minute hand points east, in what directions will the hour hand point ?
(a) North (b) North East
(c) South West (d) North West

Q.45 The angle swept by the minute hand of a clock in going from 4:45 pm to 6:15 pm is
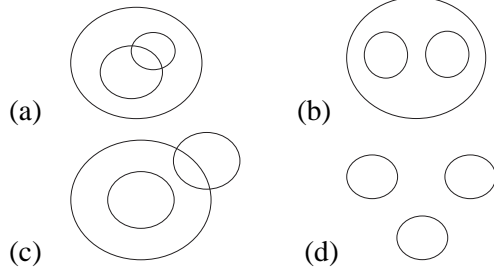(a) 540° (b) 470°
(c) 360° (d) 220°

Q.46 Complete the following series :
a__ b__ __ ab __ aa __ c
(a) abbca   (b) abbbc
(c) acacb   (d) cacba

Q.47 Choose th diagram which best describes the relationship among the given classes.
'Newspaper, Magazines, Print media'.

(a)   (b)

(c)   (d)

Q.48 What would be the day on 6th Oct 2001 ?
(a) Sunday   (b) Tuesday
(c) Saturday   (d) Wednesday

Q.49 Fill the following blank :

3	4	5
3	7	12
3	?	22

(a) 11   (b) 10
(c) 9   (d) 8

Q.50 Which year subsequent to 1996 had the same calendar as that of the year 1996?
(a) 2001   (b) 1998
(c) 1999   (d) 2024