

**DMRC**

**Previous Year Paper**  
**JE Civil 2018**  
**(13 April 2020)**

**AEC PLUS**  
POWERED BY  
Advance Engineering Classes



**DELHI METRO RAIL CORPORATION LTD.**

(Metro Bhawan, Fire Brigade Lane, Barakhamba Road, Delhi-110001)

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Test Date:	13/04/2018
Test Time:	4:30 PM - 6:45 PM
Subject:	Jr. Engineer Civil RNE04

Section : Domain

Q.1 Hyetograph is a graph representing rainfall intensity against \_\_\_\_\_. Question ID : 5121163045

- Ans
- 1. runoff
  - 2. velocity
  - 3. volume
  - 4. time

Q.2 The measurement of how effective the irrigation system is in storing water in the crop root zone, is termed as:

- Ans
- 1. water use efficiency
  - 2. water application efficiency
  - 3. water conveyance efficiency
  - 4. water treatment efficiency

Q.3 A trunnion axis can also be termed as:

Question ID : 5121163003

- Ans
- 1. Horizontal axis
  - 2. Vertical axis
  - 3. the instrumental axis
  - 4. Diagonal axis

Q.4 The property of a fluid which offers resistance to the movement of one layer to another adjacent layer is called \_\_\_\_\_. [

- Ans
- 1. viscosity
  - 2. slip
  - 3. opacity
  - 4. velocity

Q.5 Special repair work carried out every fourth year is known as \_\_\_\_\_. Question ID : 5121162988

- Ans
- 1. quarter repair
  - 2. quadrennial repair
  - 3. fourth cum repair
  - 4. special repair

Q.6 चेयरमैन की लापरवाही के कारण होने वाली त्रुटियां \_\_\_\_\_ कहलाती हैं। Question ID : 5121163002

- Ans
- 1. संचयी त्रुटियां
  - 2. प्रतिकारी त्रुटियां
  - 3. अस्थायी त्रुटियां
  - 4. गलतियां

Q.7 Which of the following precautions must be taken while centering the alidade with the station pin? Question ID :

- Ans
- 1. Alidade should be centered on the opposite side of the station pin.
  - 2. Keeping the alidade on the right of the station pin is ideal.
  - 3. Keeping the alidade on the front of the station pin is ideal.
  - 4. Keeping the alidade on the left of station pin is ideal.

Q.8 The atmospheric pressure head of water is:

Question ID : 5121163025

- Ans
- 1. 8.31 m
  - 2. 25.51 m
  - 3. 12.32 m
  - 4. 10.33 m

Q.9 The out turn of a labour in disposal of surplus earth within a lead of 30 m is:

Question ID : 5121162995

- Ans
- 1. 2.83 m<sup>3</sup> per day
  - 2. 2.5 m<sup>3</sup> per day
  - 3. 2 m<sup>3</sup> per day
  - 4. 1.5 m<sup>3</sup> per day

Q.10 The study of fluid motion involving the consideration of the forces and energies causing the flow of fluid is called \_\_\_\_\_

- Ans
- 1. statics of fluid flow
  - 2. dynamics of fluid flow
  - 3. kinematics of fluid flow
  - 4. steady laminar flow

Q.11 The value of unit power developed by a turbine is equal to:

Question ID : 5121163029

- Ans
- 1.  $\frac{P}{\frac{3}{H^2}}$
  - 2.  $\frac{P}{H^2}$
  - 3.  $\frac{P}{\sqrt{H}}$
  - 4.  $\frac{P}{H}$

Q.12 The size of a theodolite is defined according to the:

Question ID : 5121163011

- Ans
- 1. diameter of the main vertical graduated circle.
  - 2. diameter of the telescope.
  - 3. diameter of the eyepiece.
  - 4. diameter of the main horizontal graduated circle.

Q.13 Due to which of the following reasons is a plane table survey preferred?

Question ID : 5121163005

- Ans
- 1. Can be operated under rain also.
  - 2. There is no possibility of omitting the necessary measurements.
  - 3. Its fitting arrangement is perfect.
  - 4. The instrument is easy to carry.

Q.14 Which of following stones has the least percentage of water absorption by volume?

Question ID : 5121162972

- Ans
- 1. Granite
  - 2. Slate
  - 3. Shale
  - 4. Quartzite

Q.15 If the staff reading of a succeeding point is smaller than that of a preceding point it indicates \_\_\_\_\_

Question ID : 5121163033

- Ans
- 1. a rise
  - 2. no change
  - 3. a rise and fall
  - 4. a fall

Q.16 Which type of wall may be used when drop height is more than 1.5 m?

Question ID : 5121163034

Ans

- 1. Vertical drop wall
- 2. Baffle wall
- 3. Straight glacis types wall
- 4. Well type wall

Q.17 The shrinkage index is equal to:

Question ID : 5121163021

- Ans
- 1. shrinkage limit-plastic limit.
  - 2. liquid limit-shrinkage limit.
  - 3. plastic limit-shrinkage limit.
  - 4. liquid limit-plastic limit.

Q.18 For delay in completion and for bad work, the contractor is liable to pay a maximum penalty of an amount equal to:

- Ans
- 1. 8% of the total contract amount.
  - 2. 1% of the total contract amount.
  - 3. 5% of the total contract amount.
  - 4. 10% of the total contract amount.

Q.19 The basic principle of survey "working whole to part" is related to:

Question ID : 5121162999

- Ans
- 1. making plotting easier.
  - 2. making plotting centre to boundary.
  - 3. localising minor errors.
  - 4. minor errors will be magnified and uncontrollable.

Q.20 Two soil samples A and B have porosities  $n_A = 40\%$  and  $n_B = 60\%$  respectively. What is the ratio of void ratio  $e_A : e_B$ ?

- Ans
- 1. 5 : 2
  - 2. 1 : 3
  - 3. 7 : 4
  - 4. 4 : 9

Q.21 Runner with buckets are shaped in such a way that the jet gets deflected through:

Question ID : 5121163028

- Ans
- 1.  $170^\circ$  to  $180^\circ$
  - 2.  $210^\circ$  to  $220^\circ$
  - 3.  $150^\circ$  to  $160^\circ$
  - 4.  $160^\circ$  to  $170^\circ$

Q.22 An average artisan will be able to complete \_\_\_\_\_ of 12 mm-thick plastering with cement mortar per day.

- Ans
- 1. 8 m<sup>2</sup>
  - 2. 15 m<sup>2</sup>
  - 3. 5 m<sup>2</sup>
  - 4. 16 m<sup>2</sup>

Q.23 The quickest method for determination of water content is \_\_\_\_\_.

Question ID : 5121163015

- Ans
- 1. torsion balance method
  - 2. sand bath method
  - 3. oven drying method
  - 4. calcium carbide method

Q.24 A sample of saturated sand has a dry unit weight of  $18 \text{ kN/m}^3$  and a specific gravity of 2.7. If  $\gamma_{\text{water}}$  is  $10 \text{ kN/m}^3$ , the void ratio of soil sample will be:

- Ans
- 1. 0.7
  - 2. 0.3
  - 3. 0.5
  - 4. 0.8

Q.25 The tangent to the longitudinal surface of the bubble tube is known as \_\_\_\_\_.

Question ID : 5121163001

- Ans
- 1. profile of the bubble

- 2. axis of the bubble
- 3. centre line of the bubble
- 4. centre angle of the bubble

Q.26 Surcharge storage is a/an \_\_\_\_\_.

Question ID : 5121163035

- Ans
- 1. dead storage
  - 2. bank storage
  - 3. valley storage
  - 4. uncontrolled storage

Q.27 Select the correct size of septic tank for 10 users.

Question ID : 5121162991

- Ans
- 1.  $2.5 \times 0.75 \times 1$  m
  - 2.  $1.2 \times 0.6 \times 0.9$  m
  - 3.  $1.8 \times 0.6 \times 0.9$  m
  - 4.  $2.8 \times 0.75 \times 1$  m

Q.28 The amount of water stored in a river channel without any artificial storage is called \_\_\_\_\_.

Question ID : 5121163

- Ans
- 1. river storage
  - 2. valley storage
  - 3. dead storage
  - 4. bank storage

Q.29 The maximum stripping value of aggregates in bituminous construction should NOT be more than:

Question ID :

- Ans
- 1. 18%
  - 2. 25%
  - 3. 5%
  - 4. 10%

Q.30 Lacustrine soils are transported by \_\_\_\_\_.

Question ID : 5121163013

- Ans
- 1. rivers
  - 2. seas
  - 3. lakes
  - 4. wind

Q.31 A perched aquifer is found within a/an \_\_\_\_\_.

Question ID : 5121163037

- Ans
- 1. aquiclude
  - 2. unconfined aquifer
  - 3. confined aquifer
  - 4. aquitard

Q.32 The water which can be utilised by the crops from the soil is called as \_\_\_\_\_.

Question ID : 5121163039

- Ans
- 1. hygroscopic water
  - 2. duty of water
  - 3. capillary water
  - 4. field water

Q.33 The permissible limit of moisture content for doors is:

Question ID : 5121162974

- Ans
- 1. 11-13%
  - 2. 12-20%
  - 3. 7-9%
  - 4. 3-5%

Q.34 The value of unit discharge of a turbine is equal to:

Question ID : 5121163030

- Ans
- 1.  $\frac{Q}{5}$

- 2.  $\frac{Q}{H^3}$
- 3.  $\frac{Q}{H^4}$
- 4.  $\frac{Q}{\sqrt{H}}$

Q.35 Which of the following methods uses dead furrows on cropped farms for drainage of excess irrigation of rain water?

- Ans
- 1. Fresh drain
  - 2. Surface inlet
  - 3. Tile drainage
  - 4. Bedding

Q.36 Blaine's Air Permeability Apparatus is used to measure \_\_\_\_\_.

Question ID : 5121162975

- Ans
- 1. Fineness of cement
  - 2. Initial setting time of cement
  - 3. Permeability of cement
  - 4. Compressive strength of cement

Q.37 The correct sequence of temporary adjustment is \_\_\_\_\_.

Question ID : 5121163009

- Ans
- 1. setting, leveling, elimination of parallax
  - 2. elimination of parallax, Setting, leveling
  - 3. leveling, setting, elimination of parallax
  - 4. elimination of parallax, leveling, setting

Q.38 The value of the planimeter constant is added only when:

Question ID : 5121163004

- Ans
- 1. the anchor point is outside the area.
  - 2. the anchor point is just on the boundary line.
  - 3. the anchor point is inside the area.
  - 4. the anchor point is beyond the outside area.

Q.39 Mass, voluminous and thick work shall be taken in \_\_\_\_\_.

Question ID : 5121162983

- Ans
- 1. running units
  - 2. cubic units
  - 3. per day
  - 4. square units

Q.40 The compressive strength of building stones:

Question ID : 5121162973

- Ans
- 1. ranges between 60 to 200 N/mm<sup>2</sup>.
  - 2. ranges between 6 to 20 N/mm<sup>2</sup>.
  - 3. ranges between 600 to 2000 N/mm<sup>2</sup>.
  - 4. ranges between 50 to 1200 N/mm<sup>2</sup>.

Q.41 Which of the following is a drier in paints?

Question ID : 5121162976

- Ans
- 1. Poppy oil
  - 2. Litharge and its component
  - 3. Tung oil
  - 4. Linseed oil

Q.42 In which unit is explosive for blasting measured?

Question ID : 5121162986

- Ans
- 1. Per kg
  - 2. Per square meter
  - 3. Per number
  - 4. Per meter

Q.43 Land is said to be waterlogged when:

Questi

Ans  1.

the soil pores in root zone get saturated with water either by actual water table or by its capillary fringe.

- 2. there is flowing water over the land.
- 3. pH value of soil becomes as high as 8.5.
- 4. the land is necessarily submerged under standing water.

Q.44 Specification is NOT dependent upon the \_\_\_\_\_.

Question ID : 5121162996

Ans  1. quantity of material

- 2. quality of material
- 3. nature of work
- 4. availability of material

Q.45 The terms 'great triangle' and 'great circle' are used in a \_\_\_\_\_ survey.

Question ID : 5121163007

Ans  1. trigonometric

- 2. theodolite
- 3. compass
- 4. plane table

Q.46 The mass specific gravity of a fully saturated specimen of clay having a water content of 40% is 1.88. On oven drying, if mass specific gravity drops to 1.74 then the specific gravity of clay will be:

Ans  1. 1.95

- 2. 2.90
- 3. 2.67
- 4. 2.85

Q.47 Distemper is made with \_\_\_\_\_ as base.

Question ID : 5121162978

Ans  1. poppy oil

- 2. water
- 3. white chalk
- 4. alcohol

Q.48 If the rate of interest is 6% per annum then the year's purchase is:

Question ID : 5121162997

Ans  1. 0.06

- 2. 166.67
- 3. 1.667
- 4. 16.67

Q.49 The measurement is NOT made in metre in case of \_\_\_\_\_.

Question ID : 5121162984

Ans  1. moulding string course

- 2. ornamental cornice
- 3. expansion, contraction and construction joint
- 4. ornamental pillar caps

Q.50 Bulk density of soil is equal to the:

Question ID : 5121163016

Ans  1. total mass of soil / total volume of soil

- 2. mass of solids / volume of solids
- 3. mass of solids / the total volume of soil
- 4. dry density of the soil

Q.51 About 80% irrigation efficiency is possible with the sprinkler irrigation particularly in:

Question ID : 5121163042

Ans  1. hilly regions.

- 2. fully arid regions.
- 3. arid regions.
- 4. humid and semi-arid regions.

Q.52 बैक्टीरिया कंक्रीट वह कंक्रीट है जो:

Question ID : 5121162982

Ans  1.

दरार को स्वतः ठीक करने की क्षमता रखता है।

2. प्रदूषित वातावरण में प्रयोग किया जाता है।

3. समुद्री वातावरण में प्रयोग किया जाता है।

4. बैक्टीरिया से प्रभावित होता है।

Q.53 Shallow, thin and surface works shall be measured in:

Question ID : 5121162998

Ans  1. running units

2. cubic units

3. square units

4. in numbers

Q.54 The compressive strength of thermocol is within the range of:

Question ID : 5121162981

Ans  1. 7 to 44 N/mm<sup>2</sup>

2. 11.7 to 14.4 N/mm<sup>2</sup>

3. 1.7 to 14.4 N/mm<sup>2</sup>

4. 1.4 to 7.4 N/mm<sup>2</sup>

Q.55 Select the INCORRECT statement regarding a soak pit.

Question ID : 5121162990

Ans  1.

The soak pit shall not be more than 1.5 m in depth below invert level of the inlet pipe.

2. No surface water should be allowed to enter into the soak pit.

3. The soak pit shall not be less than 90 cm.

4. The soak pit should be raised above the ground level.

Q.56 The geological formation which contains and easily yields water to our tube wells is called an \_\_\_\_\_.

Question

Ans  1. aquiclude

2. aquifer

3. aquitard

4. aquifuse

Q.57 While levelling on steep slopes it is preferable to set up the instrument successively along the \_\_\_\_\_.

Question

Ans  1. curved line

2. slope line

3. zigzag line

4. straight line

Q.58 Loam is a mixture of \_\_\_\_\_.

Question ID : 5121163014

Ans  1. sand, silt and clay

2. clay and montmorillonite

3. clay and silt

4. gravel and red clay

Q.59 When high flood drainage is large but short-lived the crossing is a \_\_\_\_\_.

Question ID : 5121163046

Ans  1. siphon

2. aqueduct

3. super passage

4. level crossing

Q.60 The coefficient of permeability of clay is generally:

Question ID : 5121163023

Ans  1. between  $10^{-3}$  and  $10^{-2}$  mm/s



- 2. between  $10^{-8}$  and  $10^{-5}$  mm/s
- 3. less than  $10^{-8}$  mm/s
- 4. between  $10^{-7}$  and  $10^{-4}$  mm/s

Q.61 Which of the following materials is recommended for roofing?

Question ID : 5121162980

- Ans
- 1. PVC
  - 2. Thermocol
  - 3. Asbestos
  - 4. Nylon

Q.62 Unnecessary hurry at the time of plotting may lead to a/an \_\_\_\_\_.

Question ID : 5121163006

- Ans
- 1. instrumental error
  - 2. scale error
  - 3. shrinkage error
  - 4. plotting error

Q.63 The water application efficiency does NOT depend upon:

Question ID : 5121163044

- Ans
- 1. method of application.
  - 2. type of soil.
  - 3. climatic condition.
  - 4. geometry of the conveyance system.

Q.64 If there is flow from a soil of permeability  $k_1$  to  $k_2$ , the angles  $\theta_1$  and  $\theta_2$  which the flow line makes with the normal to the interface are related as:

- Ans
- 1.  $\tan \theta_1 / \tan \theta_2 = k_1 / k_2$
  - 2.  $\sin \theta_1 / \sin \theta_2 = k_1 / k_2$
  - 3.  $\cot \theta_1 / \cot \theta_2 = k_1 / k_2$
  - 4.  $\cos \theta_1 / \cos \theta_2 = k_1 / k_2$

Q.65 In the design of gravity dam, magnitude of ice pressure generally varies from \_\_\_\_\_ depending on temperature variation

- Ans
- 1. 350 to 1,500 kN/m<sup>2</sup>
  - 2. 200 to 1,500 kN/m<sup>2</sup>
  - 3. 450 to 1,500 kN/m<sup>2</sup>
  - 4. 250 to 1,500 kN/m<sup>2</sup>

Q.66 Out turn of the mason for Reinforced Cement Concrete (R.C.C.) work is:

Question ID : 5121162993

- Ans
- 1. 4 m<sup>3</sup>
  - 2. 2 m<sup>3</sup>
  - 3. 1.5 m<sup>3</sup>
  - 4. 3 m<sup>3</sup>

Q.67 Which of the following statements is INCORRECT?

Question ID : 5121163008

- Ans
- 1. Contour interval on a map can vary.
  - 2. Contour lines cross a ridge at right angles.
  - 3. The contour lines are closed curve.
  - 4. In steep slopes, the spacing of a contour is small.

Q.68 How much cement is required for 12 mm thick plastering with cement mortar 1 : 6 for 1 sq m area?

Question ID

- Ans
- 1. 3.2 kg
  - 2. 12.2 kg
  - 3. 9.2 kg
  - 4. 6.2 kg

Q.69

The item of steel work which is measured in square meter is \_\_\_\_\_.

Question ID : 5121162985

- Ans
- 1. fabrication and hoisting of steel work
  - 2. rolled steel joint, channels, angles and t- irons.
  - 3. fabric reinforcement, wire netting
  - 4. bending, binding of steel reinforcement

Q.70 हॉकी के आकार वाली ऊसंधि निम्न प्रकार से व्यवहार करती है:

Question ID : 5121163031

- Ans
- 1. विक्षेपित ऊसंधि
  - 2. निरोधक ऊसंधि
  - 3. आकृष्ट ऊसंधि
  - 4. डेनेहे की ऊसंधि

Q.71 Find the annual depreciation by the constant percentage method where D = annual depreciation, C = original cost, S = scrap value and n = life of the property in years.

- Ans
- 1.  $D = 1 - \left(\frac{C}{S}\right)^n$
  - 2.  $D = 1 - \left(\frac{S}{C}\right)^{\frac{1}{n}}$
  - 3.  $D = 1 - \left(\frac{S}{C}\right)^n$
  - 4.  $D = 1 - \left(\frac{C}{S}\right)^{\frac{1}{n}}$

Q.72 The drainage water is sometimes allowed to join the canal water to augment canal supplies through a hydraulic structure called a \_\_\_\_\_.

- Ans
- 1. Level crossing
  - 2. Canal outlet
  - 3. Module
  - 4. Canal inlet

Q.73 Under a certain load, the void ratio of a submerged saturated clay decreases from 1.0 to 0.92. The ultimate settlement of a thick layer due to consolidation will be:

- Ans
- 1. 12.0 cm
  - 2. 6.0 cm
  - 3. 10.0 cm
  - 4. 8.0 cm

Q.74 A nearly homogeneous solution of resin in oil, alcohol or turpentine is called \_\_\_\_\_.

Question ID : 5121162977

- Ans
- 1. Distemper
  - 2. Enamel
  - 3. Varnish
  - 4. Plastic paint

Q.75 The saturated and dry densities of a soil are  $2000 \text{ kg/m}^3$  and  $1500 \text{ kg/m}^3$  respectively. The water content (in percentage) of the soil in the saturated state would be:

- Ans
- 1. 33.33
  - 2. 44.44
  - 3. 40
  - 4. 20

Section : General Awareness

Q.1 Which city hosted the 11th World Trade Organisation (WTO) Ministerial Conference, in which the Indian delegation was led by the Minister of Commerce and Industry, Suresh Prabhu?

- Ans
- 1. Buenos Aires
  - 2. Tokyo
  - 3. Jakarta

4. London

Q.2 बजट 2018 के अनुसार, वेतनभोगी कर्मचारियों के लिए परिवहन भत्ता तथा चिकित्सा प्रतिपूर्ति के लिए ₹ \_\_\_\_\_ की एक मानक कटौती स्वीकृत की गई है।

- Ans  1. 1,00,000  
 2. 2,00,000  
 3. 40,000  
 4. 20,000

Q.3 \_\_\_\_\_ declared the inaugural edition of the Khelo India School Games (KISG) open at the Indira Gandhi Indoor Stadium in New Delhi.

- Ans  1. Ram Nath Kovind  
 2. Narendra Modi  
 3. Arun Jaitley  
 4. Dr. Harsh Vardhan

Q.4 Mahatma Gandhi started his last mass movement, \_\_\_\_\_, on 9 August 1942.

Question ID : 5121163047

- Ans  1. Quit India Movement  
 2. Civil Disobedience Movement  
 3. Satyagraha Movement  
 4. Non-Cooperation Movement

Q.5 Which Global Agency ranked India at the 30th position on its Global Manufacturing Index?

Question ID : 51211630

- Ans  1. World Bank  
 2. World Economic Forum  
 3. Deloitte Consulting  
 4. International Monetary Fund

Q.6 In the Northern Hemisphere, the summer solstice occurs in the month of \_\_\_\_\_.

Question ID : 5121163051

- Ans  1. September  
 2. June  
 3. December  
 4. March

Q.7 'Bibi ka Makbara' (the tomb of the wife), located in Aurangabad, is associated with \_\_\_\_\_.

Question ID : 51211630

- Ans  1. Jahangir  
 2. Shah Jahan  
 3. Aurangzeb  
 4. Bahadur Shah Zafar

Q.8 The Jama Masjid of Delhi was built by \_\_\_\_\_.

Question ID : 5121163048

- Ans  1. Bahadur Shah I  
 2. Shah Jahan  
 3. Aurangzeb  
 4. Akbar

Q.9 What was the main driver of inflation in rural India during the fiscal year of 2016-2017?

Question ID : 5121163056

- Ans  1. Fuel  
 2. Footwear  
 3. Furniture  
 4. Food

Q.10 How many states in India has/have one seat in the Lok Sabha?

Question ID : 5121163054

- Ans  1. One  
 2. Four  
 3. Three

4. Two

Q.11 In India, where are one-horned rhinoceroses found? Question ID : 5121163050

- Ans  1. Assam  
 2. Kashmir  
 3. Leh  
 4. Haryana

Q.12 If the Sikhs have their Gurus, whom do the Jains have? Question ID : 5121163057

- Ans  1. Lamas  
 2. Tirthankaras  
 3. Janas  
 4. Lokas

Q.13 On which of these items is the GST charged at 28%? Question ID : 5121163061

- Ans  1. Ayurvedic medicines  
 2. Pan Masala  
 3. Biscuits  
 4. Milk

Q.14 Which cricketer hit six sixes in an over off Stuart Broad in the ICC World T20 held in 2007? Question ID : 5121163063

- Ans  1. Chris Gayle  
 2. Yuvraj Singh  
 3. Lance Klusener  
 4. Brian Lara

Q.15 Nalanda University is located in the state of \_\_\_\_\_. Question ID : 5121163052

- Ans  1. Bihar  
 2. Uttar Pradesh  
 3. Chhattisgarh  
 4. Madhya Pradesh

Section : Quantitative Aptitude

Q.1 The LCM of two numbers is 396, which of the following CANNOT be their HCF? Question ID : 5121163063

- Ans  1. 66  
 2. 69  
 3. 99  
 4. 132

Q.2 If X, Y, Z are in arithmetic progression then which of the following is in arithmetic progression? Question ID : 5121163064

- Ans  1.  $Y + Z, Z + X, X + Y$   
 2.  $Z - Y, Z - X, Y - X$   
 3.  $Z + Y, Z + X, X - Y$   
 4.  $Y - Z, Z - X, X - Y$

Q.3 Find the mean of the first 10 prime numbers which are odd. Question ID : 5121163071

- Ans  1. 16.9  
 2. 15.3  
 3. 15.8  
 4. 14.4

Q.4 A person is selling an item at a loss of 20%. If the cost price of the item is increased by 25% and the selling price is increased by 20%, then the percent change in loss/profit is \_\_\_\_\_.

- Ans  1. 25  
 2. 50  
 3. 30  
 4. 45

Q.5 If the equation  $2x^2 - kx + k = 0$  has equal roots, then  $k =$

Question ID : 5121163076

- Ans
- 1. 4
  - 2. 8 only
  - 3. 0, 8
  - 4. 0 only

Q.6 At what simple rate of interest per annum will a sum grow three times at the end of 8 years?

Question ID : 51211630

- Ans
- 1. 18%
  - 2. 22%
  - 3. 25%
  - 4. 20%

Q.7 A ladder just reaches the top of a 18 m high building. If the ladder makes an angle of  $30^\circ$  with the ground, what is the length of the ladder?

- Ans
- 1.  $12\sqrt{3}$  m
  - 2.  $18\sqrt{2}$  m
  - 3.  $18\sqrt{3}$  m
  - 4. 36 m

Q.8 A and B are two places 150 km apart. Two cars start from A and B and move towards each other and meet at a point C in 1.5 h. If the speed of the car at A is 60 km/h, what is the speed of the car at B?

- Ans
- 1. 45 km/h
  - 2. 40 km/h
  - 3. 50 km/h
  - 4. 54 km/h

Q.9 By selling an article at a certain price, a man gets 10% profit. On selling the same article at  $\frac{3}{2}$  times the price, his percentage profit will be \_\_\_\_\_.

- Ans
- 1. 65%
  - 2. 60%
  - 3. 75%
  - 4. 50%

Q.10 Two angles of a triangle are  $30^\circ$  and  $60^\circ$ ; find the ratio of the sum of the first two angles to the third angle.

Question ID

- Ans
- 1. 1 : 2
  - 2. 2 : 1
  - 3. 1 : 1
  - 4. 1 : 3

Q.11 12 men working 8 hours a day complete a work in 14 days. In how many days will 4 men and 6 women working 7 hours a day complete the same work, if 2 men do as much work as 3 women?

- Ans
- 1. 30
  - 2. 35
  - 3. 32
  - 4. 24

Q.12 The value of  $\tan(765^\circ)$  is \_\_\_\_\_.

Question ID : 5121163074

- Ans
- 1.  $\frac{1}{2}$
  - 2.  $\frac{\sqrt{3}}{2}$
  - 3.  $\frac{1}{\sqrt{2}}$
  - 4. 1

Q.13 Find the least number which when decreased by 20 is exactly divisible by 18, 21, 28.

Question ID : 5121163062

- Ans
- 1. 212

- ✓ 2. 272
- ✗ 3. 232
- ✗ 4. 252

Q.14 The factorised form of  $4(x + y) - 6(x + y)^2$  is:

Question ID : 5121163075

- Ans
- ✗ 1.  $2(x + y)(2 - 3x + 3y)$
  - ✗ 2.  $2(x + y)(2 + 3x - 3y)$
  - ✗ 3.  $2(x + y)(1 - 3x - 3y)$
  - ✓ 4.  $2(x + y)(2 - 3x - 3y)$

Q.15 One quality of wheat at ₹ 16 per kg is mixed with another quality at a certain rate in the ratio 8 : 15. If the mixture so formed is worth ₹ 22 per kg, what is the rate per kg of second quality in rupees?

- Ans
- ✗ 1. ₹ 26.20
  - ✓ 2. ₹ 25.20
  - ✗ 3. ₹ 25.80
  - ✗ 4. ₹ 24.80

Section : General Intelligence and Reasoning

Q.1 Sallu rides a cycle from his home to the playground. First, he goes 4 km to the north; then, he turns right and rides for another 5 km. Finally, he turns left and rides for a distance of 1 km to reach the playground. To which side is the playground with respect to Sallu's home?

- Ans
- ✓ 1. North-East
  - ✗ 2. North-West
  - ✗ 3. South-West
  - ✗ 4. South-East

Q.2 जॉर्डन, ईवा के पिता हैं तथा हैरी, विक्टर के ससुर हैं। ईवा के बेटे, नील की बहन मार्था है। विक्टर, मार्था का पति है। जॉर्डन का हैरी के साथ क्या संबंध है?

- Ans
- ✗ 1. दामाद
  - ✓ 2. ससुर
  - ✗ 3. साला
  - ✗ 4. पिता

Q.3 Select the option that is related to the third term in the same way as the second term is related to the first term.

Victory : Celebrate :: Defeat : ?

- Ans
- ✗ 1. Cheer
  - ✓ 2. Mourn
  - ✗ 3. Angst
  - ✗ 4. Rejoice

Q.4 Select the option that is related to the third term in the same way as the second term is related to the first term.

6 : 180 :: 5 : ?

- Ans
- ✗ 1. 120
  - ✗ 2. 150
  - ✗ 3. 25
  - ✓ 4. 125

Q.5 Which word CANNOT be formed using letters of the given word not more than the number of times each letter appears in the given word?

ACCLIMATISE

- Ans
- ✓ 1. CALAMITY
  - ✗ 2. ELASTIC
  - ✗ 3. ACCLAIM
  - ✗ 4. SILICATE

Q.6 In a slow cycle race, Leela finished faster than Bela, Veena finished faster than Sheena, and Sasha finished faster than Ash. If Bela finished faster than Sasha and Leela finished after Sheena, who among the given friends won the slow cycle race?

- Ans
- 1. Sasha
  - 2. Bela
  - 3. Asha
  - 4. Leela

Q.7 Select the option that is related to the third term in the same way as the second term is related to the first term.

17 : 51 :: 29 : ?

- Ans
- 1. 58
  - 2. 87
  - 3. 89
  - 4. 93

Q.8 Fill in the blank of the following series:

Question ID : 5121163090

100, 75, 50, 25, \_\_\_\_\_, -25,

- Ans
- 1. 5
  - 2. -5
  - 3. -1
  - 4. 0

Q.9 The following equations have been solved on the basis of a certain system. Following that system, solve the given equation.

$25 + 16 = 21$ ,  $9 + 36 = 3$ ,  $16 + 49 = ?$

- Ans
- 1. 23
  - 2. -3
  - 3. 11
  - 4. 9

Q.10 Six friends, P, Q, R, S, T and U are sitting in a circle facing one another. Each person is seated exactly opposite another or R does not sit next to T or U. S sits to Q's immediate right. Q is sitting opposite P. U is sitting to T's immediate left. Neither P nor S is sitting opposite R. Who is sitting immediately left to Q?

- Ans
- 1. T
  - 2. U
  - 3. S
  - 4. R

Q.11 In a code language, TIME is written in a certain code as 1326, MEAL as 2654 and MILE as 2346. How is METAL most likely to be written in that code?

- Ans
- 1. 26154
  - 2. 65124
  - 3. 43162
  - 4. 12563

Q.12 What will be the value of the expression given below if the sign '×' is interchanged with the sign '÷' and the number '6' is interchanged with '8'?

$(72 \times 8) \div 6 = ?$

- Ans
- 1. 96
  - 2. 3
  - 3. 14
  - 4. 54

Q.13 In a code language, DELUSION is coded as NOISDELU. How will METALLIC be coded in that language?

- Ans
- 1. CILLMETA
  - 2. ATMECILL
  - 3. CLLIEMTA
  - 4. LLICATEM

Q.14 Fill in the blank of the following series:

Question ID : 5121163091

4096, 2048, 1024, \_\_\_\_\_, 256, 128, 64

- Ans
- 1. 612
  - 2. 636
  - 3. 512
  - 4. 536

Q.15 If WATER is called MILK, MILK is called JUICE, JUICE is called COFFEE, and COFFEE is called TEA, which of the following will be extracted from fruits?

- Ans
- 1. MILK
  - 2. TEA
  - 3. WATER
  - 4. COFFEE

Section : General English

Q.1 Identify the underlined parts of speech:

Question ID : 5121163114

She was so exhausted that she could scarcely stand.

- Ans
- 1. Interjection
  - 2. Preposition
  - 3. Conjunction
  - 4. Adverb

Q.2 Choose the appropriate antonym of the given word:

Question ID : 5121163138

Temporal

- Ans
- 1. Spatial
  - 2. Spiritual
  - 3. Majestic
  - 4. Temporary

Q.3 Change the voice of the sentence:

Question ID : 5121163126

The entire village regarded Manas as a fraud and an imposter.

- Ans
- 1. Manas was regarded as a fraud and an imposter by the entire village.
  - 2. Manas is been regarded as a fraud and an imposter by the entire village.
  - 3. Manas had been regarded as a fraud and an imposter by the entire village.
  - 4. Manas is regarded as a fraud and an imposter by the entire village.

Q.4 Identify the error in the sentence given:

Question ID : 5121163144

We are having two houses in Coimbatore.

- Ans
- 1. in
  - 2. We are having
  - 3. two houses
  - 4. Coimbatore

Q.5 Identify the error in the sentence given:

Question ID : 5121163149

The teacher asked the students to draw map of India.

- Ans
- 1. The teacher
  - 2. to draw map
  - 3. of India



4. asked the students

Q.6 Choose the meaning of the underlined phrases in the given sentence:

Question ID : 5121163142

Rust had eaten away much of the exterior part of the large boat.

- Ans
- 1. corroded
  - 2. galvanised
  - 3. bolstered
  - 4. strengthened

Q.7 Identify the underlined parts of speech:

Question ID : 5121163105

We need to have an experienced coach to guide our team.

- Ans
- 1. Verb
  - 2. Adverb
  - 3. Noun
  - 4. Adjective

Q.8 Identify the underlined parts of speech:

Question ID : 5121163115

Accounts are an integral part of any office.

- Ans
- 1. Adverb
  - 2. Adjective
  - 3. Noun
  - 4. Verb

Q.9 Choose the appropriate antonym of the given word:

Question ID : 5121163136

Sacred

- Ans
- 1. Secret
  - 2. Create
  - 3. Pious
  - 4. Profane

Q.10 Transform the sentence into indirect speech:

Question ID : 5121163120

The king said, "Son, please take my golden jug and fetch me some water from the well".

- Ans
- 1. The king requested to take his golden jug and fetch him some water from the well.
  - 2. The king requested his son to take his golden jug and fetch him some water from the well.
  - 3. The king requests his son to take his golden jug and fetch him some water from the well.
  - 4. The king asked his son to take his golden jug and fetch him some water from the well.

Q.11 Choose the correct meaning of the given word:

Question ID : 5121163128

Yield

- Ans
- 1. Give
  - 2. Defeat
  - 3. Surrender
  - 4. Take

Q.12 Select the adverb in the given sentence.

Question ID : 5121163121

I have heard this song before.

- Ans
- 1. have
  - 2. this
  - 3. heard
  - 4. before

Q.13 Identify the underlined parts of speech:

Question ID : 5121163099

Rupesh drove rashly along the narrow road.

- Ans
- 1. Noun
  - 2. Adverb
  - 3. Adjective
  - 4. Verb

Q.14 Choose the appropriate antonym of the given word:

Question ID : 5121163137

Variable

- Ans
- 1. Constant
  - 2. Variety
  - 3. Variation
  - 4. Callous

Q.15 Identify the error in the sentence given:

Question ID :

Either his parents or Majid is to be appreciated for taking a timely decision in this sensitive matter.

- Ans
- 1. to be appreciated
  - 2. for taking a timely decision
  - 3. Either his parents or Majid is
  - 4. in this sensitive matter

Q.16 Identify the error in the sentence given:

Question ID : 5121163150

My daughter is loving to sing and dance during festivals.

- Ans
- 1. festivals
  - 2. during
  - 3. My daughter
  - 4. is loving to sing and dance

Q.17 Identify the underlined parts of speech:

Question ID : 5121163112

The hockey match was cancelled because it was raining heavily.

- Ans
- 1. Conjunction
  - 2. Noun
  - 3. Adjective
  - 4. Adverb

Q.18 Choose the meaning of the underlined phrases in the given sentence:

Question ID : 5121163140

The visiting Indian team called on the Sports Minister of Australia.

- Ans
- 1. paid a visit
  - 2. spoke about
  - 3. asked for
  - 4. sought permission

Q.19 Identify the error in the sentence given:

Question ID : 5121163145

Each of the girls were given instructions by the coach before the match.

- Ans
- 1. Each of the girls
  - 2. by the coach
  - 3. before the match
  - 4. were given instructions

Q.20

Question I

Transform the sentence into indirect speech:

The poor mother wrote, "I am waiting and watching and longing for my daughter's return".

Ans  1.

The poor mother wrote that she was waiting and watching and longing for her daughter's return.

2. The poor mother wrote that she is waiting and watching and longing for her daughter's return.

3.

The poor mother wrote that she has been waiting and watching and longing for her daughter's return.

4. The poor mother wrote that she waits and watches and longs for her daughter's return.

Q.21 Choose the meaning of the underlined phrases in the given sentence:

Question ID : 5121163141

The claims made by the vice-president were backed up by the board members.

Ans  1. supported

2. analysed

3. brought by

4. understood

Q.22 Identify the underlined parts of speech:

Question ID : 5121163111

There is a banyan tree behind our house.

Ans  1. Verb

2. Conjunction

3. Adverb

4. Preposition

Q.23 Identify the error in the sentence given:

Question ID : 5121163147

No one writes on the board as neat as our History teacher.

Ans  1. No one writes

2. our History teacher

3. as neat as

4. on the board

Q.24 Identify the underlined parts of speech:

Question ID : 5121163101

Reading will help you to widen your horizon.

Ans  1. Adjective

2. Verb

3. Adverb

4. Noun

Q.25 Identify the underlined parts of speech:

Question ID : 5121163113

None of her friends came for the wedding.

Ans  1. Adverb

2. Pronoun

3. Noun

4. Adjective

Q.26 Identify the underlined parts of speech:

Question ID : 5121163102

The motorist was blinded by the sun's rays.

Ans  1. Verb

2. Adjective

3. Conjunction

4. Adverb

Q.27

Transform the sentence into indirect speech:

Question ID : 5121163118

Ravi Kumar says, "The Manager is writing some important letters".

Ans  1.

Ravi Kumar says that the Manager was writing some important letters.

2.

Ravi Kumar says that the Manager had been writing some important letters.

3.

Ravi Kumar says that the Manager has been writing some important letters.

4. Ravi Kumar says that the Manager is writing some important letters.

Q.28 Choose the correct meaning of the given word:

Question ID : 5121163131

Degeneration

Ans  1. Deterioration

2. Destruction

3. Devastation

4. Development

Q.29 Identify the error in the sentence given:

Question ID : 5121163152

Each man and each woman have to vote in this election.

Ans  1. have to vote

2. in

3. Each man and each woman

4. this election

Q.30 Identify the error in the sentence given:

Question ID : 5121163148

Scarcely had she gone than a messenger came looking for her.

Ans  1. for her

2. looking

3. Scarcely had she gone

4. than a messenger came

Q.31 Change the voice of the sentence:

Question ID : 5121163125

All his classmates laughed at him.

Ans  1. He was laughed at by all his classmates.

2. He is laughed at by all his classmates.

3. He was laughed at from all his classmates.

4. He was laughed by all his classmates.

Q.32 Change the voice of the sentence:

Question ID : 5121163127

Subject the criminal to a severe interrogation.

Ans  1.

The criminal may be subjected to a severe interrogation.

2.

The criminal should be subjected to a severe interrogation.

3.

The criminal is be subjected to a severe interrogation.

4.

The criminal was subjected to a severe interrogation.

Q.33 Choose the correct meaning of the given word:

Question ID : 5121163132

Proscribe

Ans  1. Allow

- 2. Prescribe
- 3. Permit
- 4. Ban

Q.34 Transform the sentence into direct speech:

Question ID : 5121163122

The young lamb asked its mother what that funny object was.

Ans  1.

The young lamb said, "Mother, what is that funny object"?

2.

The young lamb said, "Mother, what that funny object is"?

3.

The young lamb said, "Mother, what that funny object was"?

4.

The young lamb said, "Mother, what is this funny object"?

Q.35 Identify the underlined parts of speech:

Question ID : 5121163110

Problems cannot be solved unless they are discussed.

Ans  1. Adverb

2. Preposition

3. Adjective

4. Conjunction

Q.36 Change the voice of the sentence:

Question ID : 5121163123

We shall be blamed by everyone in the panchayat.

Ans  1. Everyone in the panchayat shall blame us.

2. Everyone in the panchayat has blamed us.

3. Everyone in the panchayat might blame us.

4. Everyone in the panchayat should blame us.

Q.37 Identify the error in the sentence given:

Question ID : 5121163151

The fever has taken a turn for the better till yesterday.

Ans  1. till

2. The fever has taken

3. yesterday

4. a turn for the better

Q.38 Identify the error in the sentence given:

Question ID : 5121163146

The tiger, an animal equal to lion in size, is a native of Asia.

Ans  1. an animal equal to lion in size

2. is a native

3. The tiger

4. of Asia

Q.39 Choose the appropriate antonym of the given word:

Question ID : 5121163134

Deliberate

Ans  1. Accidental

2. Undeliberate

3. Elaborate

4. Indeliberate

Q.40 Identify the underlined parts of speech:

Question ID : 5121163117

The Sharmas formerly lived at Naidu Nagar.

- Ans  1. Adverb  
 2. Preposition  
 3. Adjective  
 4. Verb

Q.41 Identify the underlined parts of speech:

Question ID : 5121163108

How big is the new cricket stadium at Kochi?

- Ans  1. Preposition  
 2. Adjective  
 3. Adverb  
 4. Conjunction

Q.42 Identify the underlined parts of speech:

Question ID : 5121163098

My new job at the mall makes me feel depressed.

- Ans  1. Conjunction  
 2. Adverb  
 3. Adjective  
 4. Noun

Q.43 Change the voice of the sentence:

Question ID : 5121163124

The principal was pleased by the teacher's work.

- Ans  1. The teacher's work pleased the principal.  
 2.  
The teacher's work had pleased the principal.  
 3.  
The teacher's work has pleased the principal.  
 4. The teacher's work is pleased the principal.

Q.44 Identify the underlined parts of speech:

Question ID : 5121163116

The bed-switch is below the window.

- Ans  1. Adverb  
 2. Conjunction  
 3. Preposition  
 4. Adjective

Q.45 Identify the underlined parts of speech:

Question ID : 5121163104

As the master left home, the dog looked at him sadly.

- Ans  1. Adjective  
 2. Verb  
 3. Adverb  
 4. Preposition

Q.46 Identify the underlined parts of speech:

Question ID : 5121163109

The mob advanced towards the police near the junction.

- Ans  1. Verb  
 2. Conjunction  
 3. Adverb  
 4. Preposition

Q.47 Identify the underlined parts of speech:

Question ID : 5121163106

They went home after the match.

- Ans
- 1. Conjunction
  - 2. Adjective
  - 3. Adverb
  - 4. Preposition

Q.48 Identify the underlined parts of speech:

Question ID : 5121163103

The brave girl swam across the swirling river.

- Ans
- 1. Adverb
  - 2. Conjunction
  - 3. Preposition
  - 4. Verb

Q.49 Identify the underlined parts of speech:

Question ID : 5121163100

Rami had phoned while you were away.

- Ans
- 1. Preposition
  - 2. Adverb
  - 3. Conjunction
  - 4. Noun

Q.50 Choose the correct meaning of the given word:

Question ID : 5121163133

Superfluous

- Ans
- 1. Necessary
  - 2. Relevant
  - 3. Superficial
  - 4. Unnecessary

Q.51 Choose the appropriate antonym of the given word:

Question ID : 5121163135

Justify

- Ans
- 1. Address
  - 2. Condemn
  - 3. Benign
  - 4. Justice

Q.52 Identify the underlined parts of speech:

Question ID : 5121163107

Hotel Taj has opened a new branch in our town.

- Ans
- 1. Adverb
  - 2. Noun
  - 3. Adjective
  - 4. Interjection

Q.53 Choose the correct meaning of the given word:

Question ID : 5121163130

Liberal

- Ans
- 1. Conservative
  - 2. Major
  - 3. Minor
  - 4. Generous

Q.54 Choose the meaning of the underlined phrases in the given sentence:

Question ID : 5121163139

The great sportsman broke down in the middle of his speech.

- Ans
- 1. cried
  - 2. laughed

3. sighed

4. fainted

Q.55 Choose the correct meaning of the given word:

Question ID : 5121163129

Abbreviate

Ans  1. Inebriated

2. Lengthen

3. Shorten

4. Widen

Comprehension:

Answer questions based on the passage below:

Have you ever wondered what keeps a hot air balloon flying? The same principle that keeps food frozen in the open chest freezers at the grocery store allows hot air balloons to fly. It's a very basic principle: Hot air rises and cold air falls. So while the super-cooled air in the grocery store freezer settles down around the food, the hot air in a hot air balloon pushes up, keeping the balloon floating above the ground. In order to understand more about how this principle works in hot air balloons, it helps to know more about hot air balloons themselves.

A hot air balloon has three major parts: the basket, the burner, and the envelope. The basket is where passengers ride. The basket is usually made of wicker. This ensures that it will be comfortable and add little extra weight. The burner is positioned above the passenger's heads and produces a huge flame to heat the air inside the envelope. The envelope is the colorful fabric balloon that holds the hot air. When the air inside the envelope is heated, the balloon rises.

The pilot can control the up-and-down movements of the hot air balloon by regulating the heat in the envelope. To ascend, the pilot heats the air in the envelope. When the pilot is ready to land, the air in the balloon is allowed to cool and the balloon becomes heavier than air. This makes the balloon descend.

Before the balloon is launched, the pilot knows which way the wind is blowing. This means that she has a general idea about which way the balloon will go. But, sometimes the pilot can actually control the direction that the balloon flies while in flight. This is because the air above the ground is sectioned into layers in which the direction of the wind may be different. So even though the pilot can't steer the balloon, she can fly or higher or lower into a different layer of air. Some days the difference between the direction of the wind between layers is *negligible*. But other days the difference is so strong that it can actually push the balloon in a completely different direction!

SubQuestion No : 56

Q.56 How does a hot air balloon rise?

Question ID : 5121163095

Ans  1. When open chest freezers are used in hot air balloons.

2. When the balloon is heavier than air.

3. When the air inside the envelope is heated.

4.

When the passengers reduce the weight of the balloon.

Comprehension:



Answer questions based on the passage below:

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SubQuestion No : 57

Q.57 The passengers of a hot air balloon will ride in the \_\_\_\_\_.

Question ID : 5121163094

- Ans
- 1. envelope
  - 2. basket
  - 3. burner
  - 4. wicket

Comprehension:

Answer questions based on the passage below:

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SubQuestion No : 58

Q.58 The word 'negligible' used towards the end of the passage means \_\_\_\_\_.

Question ID : 5121163096

- Ans
- 1. insignificant
  - 2. great
  - 3. fast
  - 4. thick

Comprehension:

Answer questions based on the passage below:

Have you ever wondered what keeps a hot air balloon flying? The same principle that keeps food frozen in the open chest freezers at the grocery store allows hot air balloons to fly. It's a very basic principle: Hot air rises and cold air falls. So while the super-cooled air in the grocery store freezer settles down around the food, the hot air in a hot air balloon pushes up, keeping the balloon floating above the ground. In order to understand more about how this principle works in hot air balloons, it helps to know more about hot air balloons themselves.

A hot air balloon has three major parts: the basket, the burner, and the envelope. The basket is where passengers ride. The basket is usually made of wicker. This ensures that it will be comfortable and add little extra weight. The burner is positioned above the passenger's heads and produces a huge flame to heat the air inside the envelope. The envelope is the colorful fabric balloon that holds the hot air. When the air inside the envelope is heated, the balloon rises.

The pilot can control the up-and-down movements of the hot air balloon by regulating the heat in the envelope. To ascend, the pilot heats the air in the envelope. When the pilot is ready to land, the air in the balloon is allowed to cool and the balloon becomes heavier than air. This makes the balloon descend.

Before the balloon is launched, the pilot knows which way the wind is blowing. This means that she has a general idea about which way the balloon will go. But, sometimes the pilot can actually control the direction that the balloon flies while in flight. This is because the air above the ground is sectioned into layers in which the direction of the wind may be different. So even though the pilot can't steer the balloon, she can fly or higher or lower into a different layer of air. Some days the difference between the direction of the wind between layers is *negligible*. But other days the difference is so strong that it can actually push the balloon in a completely different direction!

SubQuestion No : 59

Q.59 The pilot can control the \_\_\_\_\_ movements of the hot air balloon by controlling the heat in the envelope.

Question ID : 5121163097

- Ans
- 1. westerly
  - 2. easterly
  - 3. up and down
  - 4. sideways

Comprehension:

Answer questions based on the passage below:

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SubQuestion No : 60

Q.60 What principle is mentioned in the early part of the passage?

Question ID : 5121163093

Ans  1.

The principle that results in the formation of ice.

2. The principle that helps to thaw frozen food.

3. The principle that keeps food frozen.

4.

The principle of preserving food in hot air balloons.