# SIF Kuwait - Sastra Prathibha Contest 2020 – 2021

## Senior – FINAL

**Question:1**

Who fought against US for patents of Turmeric, Neem and Basmati Rice?

   A. Dr. Avtar Singh Paintal

   B. Dr. Rajendra Singh

   C. Dr. R. A. Mashelkar

   D. Dr. Varghese Kurian

**Question:2**

Which one pair of numbers is different from the other three?

   A. 19,27

   B. 16,24

   C. 15,23

   D. 13,21

**Question:3**

Moderna coronavirus vaccine is an example of

   A. mRNA vaccines

   B. protein-only vaccine

   C. Attenuated whole virus vaccine

   D. Live virus vaccine

**Question:4**

An electric bulb of 80W is used for 4 h per day. Calculate the units of energy consumed by the bulb in one day?

   A. 32 units

   B. 0.27 units

   C. 0.32 units

   D. 0.35 units

**Question:5**

Complete the series 3, 28, 128, 353, 753,_____

   A. 1156

   B. 1289

   C. 1348

   D. 1378

**Question:6**

_____ orbit lies at a height of about 36,000 km from the surface of the Earth

    A. Geostationary

    B. Geosynchronous

    C. Asynchronous

    D. Polar

**Question:7**

The points (-5, 1), (1, p) and (4, -2) are collinear if the value of p is _____

    A. 3

    B. 2

    C. 1

    D. -1

**Question:8**

National Science Day is celebrated in India on?

    A. September 28

    B. June 29

    C. February 28

    D. December 22

**Question:9**

How many moles of NaOH are present in 200 g of it?

    A. 4 moles

    B. 5 moles

    C. 3 moles

    D. 2.5 moles

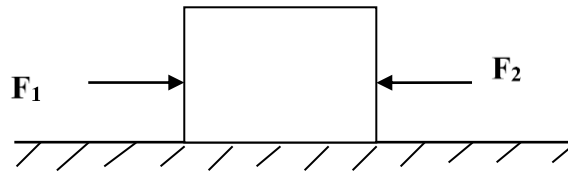**Question:10**

Choose the incorrect statement among the following?

    A. The plant cell wall is mainly composed of cellulose

    B. Prokaryotic cells have well defined nuclear region with nuclear membrane

    C. Lysosomes are filled with digestive enzymes made by RER

    D. Chloroplasts contain various yellow or orange pigments in addition to chlorophyll.

**Question:11**

Two forces $F_1$ and $F_2$ are acting on a body of mass 10kg as shown in the figure. If $F_1$= 20N and $F_2$= 5N, what will be the acceleration of the body?



A. $3m/s^2$

B. $1.5m/s^2$

C. $4m/s^2$

D. $1.5m/s^2$

**Question:12**

Name the Autobiography of the sportsman Major Dhyan Chand

A. Straight from the Heart

B. Coach

C. Goal

D. Dream

**Question:13**

Select the variety of honey bee which stings less and has high honey collection capacity?

A. *A. dorsata*

B. *A. cerana indica*

C. *A. florae*

D. *A. mellifera*

**Question:14**

A point has _____ dimension.

A. One

B. Two

C. Three

D. Zero

**Question:15**

_____is the first Indian mobile app, developed by Government of India for contact tracing, syndromic mapping and self-assessment during COVID–19.

A. Arogya Mitra

B. Arogya Maitri

C. Arogya Sethu

D. Arogya Jeevani

**Question:16**

Which among the following is not a property of Lipids.

A. Organic compounds

B. Derivatives of fatty acids

C. Soluble in water

D. Soluble in organic solvents

**Question:17**

A person walks 8m towards north then 15m towards the east, find the magnitude of his displacement?

A. 17 m

B. 20 m

C. 15 m

D. 5 m

**Question:18**

In which city headquarters of World Bank situated?.

A. Washington

B. California

C. Geneva

D. Vienna

**Question:19**

Acidity related pain, bleeding in the stomach and duodenum, indicates the disease

A. Typhoid

B. Peptic ulcer

C. Measles

D. Tuberculosis

**Question:20**

Author of the book "The daughter from a wishing tree: unusual tales about women in mythology"

A. Leena Sohoni

B. Sudha Murthy

C. Arundathi Roy

D. Sangeeta Phulsuge

**Question:21**

Which of the following has no need for a Gall Bladder

A. Lion

B. Horse

C. Dog

D. Human

**Question:22**

Identify the form of energy possessed, in the following examples

i. An asteroid falling to earth at high speed.

ii. Rock sitting at the edge of a cliff.

A. (i) Kinetic   (ii) Potential

B. (i) Potential (ii) Kinetic

C. (i) Kinetic   (ii) Kinetic

D. (i) Potential (ii) Potential

**Question:23**

Asia's First human DNA bank is at _____?

A. Indore

B. Lucknow

C. Pune

D. Hyderabad

**Question:24**

The mass of a body is 6 kg and its volume is 500 cm$^3$. Find its relative density?

A. 12 g cm$^3$

B. 60 g cm$^3$

C. 12 g cm$^{-3}$

D. 35 g cm$^{-3}$

**Question:25**

To hear a distinct echo, the minimum distance of the obstacle from the source of sound must be ___
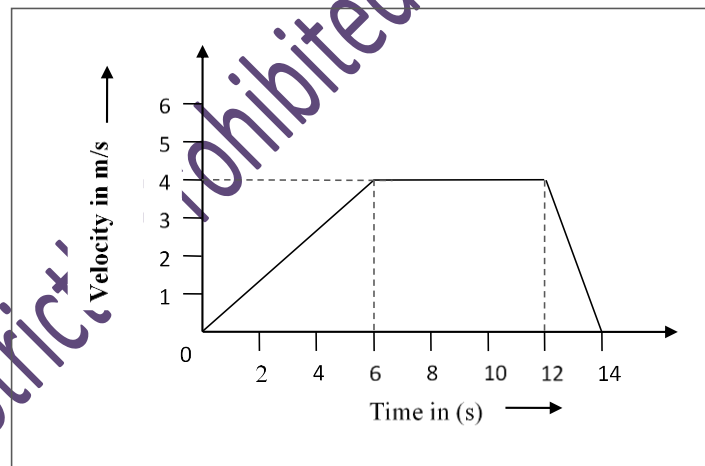
A. 17.2m

B. 34.4m

C. 14.2m

D. 36.4m

**Question:26**

Sir Ronald Ross Institute of Tropical and Communicable Diseases is located at?

A. Mahendragiri

B. Lucknow

C. Nainital

D. Hyderabad

**Question:27**

The motion of a toy car is described by the velocity- time graph as shown in the figure given below.

Find the distance travelled by the toy car in between 0 to 12s?



A. 36 m

B. 45 m

C. 25 m

D. 48 m

**Question:28**

Read the paragraph and decide which of the given statements would most weaken the argument?

**"If all beaches were publicly owned, we would have to rely on government funds to maintain them. It is true that more people would have access to the ocean and beaches, but at what cost? If the beaches are not cared for adequately, soon there will be nothing left worth having access to. We should consider carefully before nationalizing more coastal property."**

A. The public does not want additional access to beaches.

B. The government is currently responsible for the maintenance of all public and private beaches.

C. The public already has some access to many beaches.

D. Some privately owned beaches are not well maintained.

**Question:29**

A solution contains 150g of sugar in 450 ml of water. Calculate the concentration in terms of mass by volume percentage of the solution?

A. 10%

B. 25%

C. 5%

D. 30%

**Question:30**

The physician behind Chitra -TTK heart valve?

A. Dr. K.M. Cherian

B. Dr. M. S. Valiathan

C. Dr. Subhash Mukhopadhyay

D. Dr. Mahendra Lal Sircar

**Question:31**

If P(E) = 0.44, then P(not E) will be:

A. 0.44

B. 0.55

C. 0.50

D. 0.56

**Question:32**

Choose the missing terms out of the given alternatives.  MHZ, NIW, OKT, PNQ, ___

A. RRN

B. QRN

C. QRM

D. QQN

**Question:33**

Automobile exhaust is a type of aerosol which is an example of

A. Liquid dispersed in gas

B. Gas dispersed in liquid

C. Gas dispersed in solid

D. Solid dispersed in gas

**Question:34**

Who is called as the 'Father of Indian Software Industry'?

A. Faqir Chand Kohli

B. S. Z. Qasim

C. Narayana Murthy

D. Azim Premji

**Question:35**

Calculate the percentage of Oxygen in Hydrogen peroxide ($H_2O_2$)

A. 94.12%

B. 95%

C. 90.5%

D. 91.12%

**Question:36**

Tropic of Cancer passes thru how many states in India

A. 8

B. 5

C. 3

D. 9

**Question:37**

Which one of the following can be explained on the basis of Newton's second law of motion?

A. Recoiling of gun

B. The boat moves backward when the sailor jumps out of the boat in forward direction.

C. A karate player breaks a slab of ice with a single blow

D. Only the carom coin at bottom of a pile is removed when the fast moving striker hits it.

## Question:38

Who established the Indian Academy of Sciences in 1934?

A. C. V. Raman

B. J. C. Bose

C. Acharya P. C. Ray

D. Meghanad Saha

## Question:39

"In a chemical substance the elements are always present in definite proportions by mass". This law was stated by-

A. John Dalton

B. Antoine Lavoisier

C. Joseph Proust

D. Wilhelm Ostwald

## Question:40

Chemical formula of Ammonium phosphate is

A. $NH_3PO_4$

B. $(NH_4)_2 PO_4$

C. $NH_2PO_4$

D. $(NH_4)_3PO_4$

## Question:41

Who described the process of Zinc production by distillation process?

A. Nagarjuna

B. Charaka

C. Bhojadeva

D. Kanada

**Question:42**

When we place camphor in an open container, its amount keeps on decreasing due to _____

- A. Evaporation
- B. Precipitation
- C. Condensation
- D. Sublimation

**Question:43**

In the Rutherford's $\propto$- particle scattering experiment, one out of every 12,000 particles appeared to rebound. This is because

- A. Most of the space inside the atom is empty
- B. All the positive charge and mass were concentrated in very small volume called nucleus
- C. The positive charge of the atom occupies very little space
- D. Neutrons in the nucleus do not have any effect on the $\propto$- particle

**Question:44**

Which ancient Indian export industry was dismantled and banned by the British?

- A. Agriculture
- B. Shipbuilding
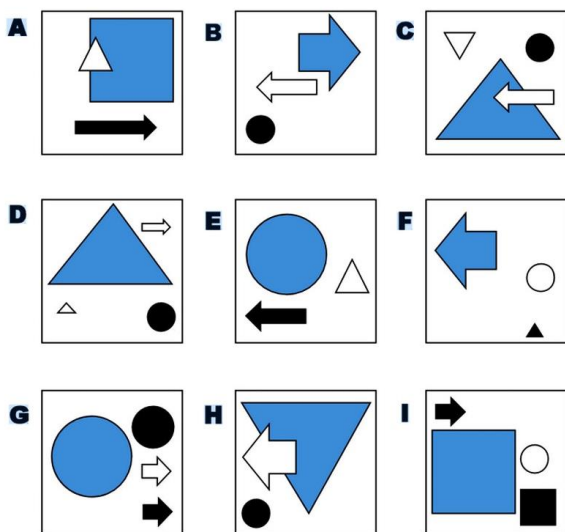- C. Wootz Steel
- D. Textile

**Question:45**

Ajay and Vijay set up an experiment to study osmosis. Ajay placed a deshelled egg into a beaker containing dilute salt solution and labelled it 'X' and Vijay placed a deshelled egg into a beaker containing concentrated sugar solution and labelled it 'Y'. They made the following observations. After five minutes the egg in the beaker 'X' swells up and the egg in beaker 'Y' shrinks. What type of the solutions are the eggs placed in?

- A. The solution in beaker 'X' is hypotonic while in beaker 'Y' is hypertonic
- B. The beaker 'X' has lower concentration of water than beaker 'Y'
- C. The solution in beaker 'Y' is isotonic and in beaker 'X' is hypertonic
- D. The beaker 'Y' has higher concentration of water than beaker 'X'

**Question:46**

Choose the one which is not part of the group.



    A. H.

    B. D

    C. C.

    D. None of the above

**Question:47**

The temperature on the surface of the moon ranges from -190℃ to 110 ℃. This is due to

    A. Absence of water bodies

    B. Presence of large basaltic plains

    C. Absence of atmosphere
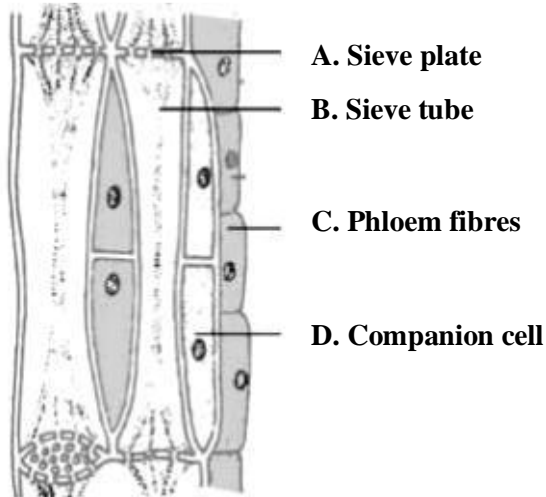
    D. Presence of huge lunar rocks

**Question:48**

A block of mass 5 kg exerts a force of 50 N on a table with its surface of dimensions 20 cm × 10 cm. Calculate the pressure exerted by the block?

    A. 250 Nm$^2$

    B. 2500 Nm$^{-2}$

    C. 2500 N/m$^2$

    D. 2500 N/m$^{-2}$

**Question:49**

Given below is a diagram showing the structure of complex tissue – Phloem.

Identify the wrongly labeled part of the phloem tissue.

A. Sieve plate

B. Sieve tube

C. Phloem fibres

D. Companion cell

**Question:50**

If A + B means A is the brother of B; A - B means A is the sister of B and A x B means A is the father of B. Which of the following means that C is the son of M?

A. M - N x C + F

B. F - C + N x M

C. N + M - F x C

D. M x N - C + F

**Question:51**

The system of scientific naming or binomial nomenclature was introduced by eighteenth century scientist _____.

A. Charles Darwin

B. Walter G. Rosen

C. Carolus Linnaeus

D. Robert Whittaker

**Question:52**

Atom of an element has 15 protons, 15 electrons and 16 neutrons, the atomic mass of the atom is

A. 30

B. 16

C. 31

D. 14

**Question:53**

Identify the animal that shows the following features.

   i.  Three chambered heart

   ii.  They lay egg

   iii.  Respiration is through either gills or lungs

   iv.  Body lacks scales while mucus glands are present in the skin

A. Salamander

B. Draco

C. Sting ray

D. Lizard

**Question:54**

Which famous Indian scientist told 'I am married to creativity'?

A. Dr. Homi J. Bhabha

B. Dr. A. P. J. Abdul Kalam

C. Dr. C. V. Raman

D. Dr. S. Chandrasekhar

**Question:55**

The Nodes of Ranvier is associated with:

A. Nerve cells

B. Heart cells

C. Liver cells

D. All of the above

**Question:56**

The sides of a triangle are in the ratio 5 : 3 : 4 and its perimeter is 12cm. The area is:

A. 121 sq.cm.

B. 256 sq.cm.

C. 6 sq.cm.

D. 36 sq.cm.

**Question:57**

Which of the following is not a vector quantity?

A. Speed

B. Velocity

C. Displacement

D. Force

**Question:58**

Genetic disorders can be attributed to which of the following_____

A. Gross chromosomal abnormalities

B. Gender

C. Mutation

D. None of the above

**Question:59**

The zero of the polynomial f(x) = 5x+7 is _____

A. 5/7

B. -5/7

C. -7/5

D. 7/5

**Question:60**

Who authored the reputed arithmetic and geometry book Lilavati?

A. Baudhayana

B. Bhaskaracharya

C. Madhava

D. Salihothra

**Question:61**

Decide which of the conclusions definitely follows from given statements.

Statement: All young scientists are open minded. No open minded person is superstitious.

Conclusion: (I) no scientists is superstitions.　　　　(II) No young people are superstitious

    A. Only I follows

    B. Only II follows

    C. Neither I nor II follows

    D. Both I and II follows

**Question:62**

In ABC, DE || AB. If CD = 3 cm, EC = 4 cm, BE = 6 cm, then DA is equal to _____

    A. 7.5 cm

    B. 3 cm

    C. 4.5 cm

    D. 6 cm

**Question:63**

Which of the following is not awarded in Mathematics?

    A. Wolf Prize

    B. Bocher Prize

    C. Fields Prize

    D. Nobel Prize

**Question:64**

Who wrote 'Chandra Hastra', the earliest known Sanskrit treatise on prosody (the study of poetic meters and verse)?

    A. Pingala

    B. Pathanjali

    C. Panini

    D. Jeevaka

**Question:65**

If x and y are complementary angles, then;

    A. $\sin x = \sin y$

    B. $\tan x = \tan y$

    C. $\cos x = \cos y$

    D. $\sec x = \csc y$

**Question:66**

India's first scientific base station in Antarctica?

    A. Himadri

    B. Rohini

    C. Dakshin Gangotri

    D. Maithri

**Question:67**

Which of the following statement is incorrect about organic farming?

    A. Crop rotation and inter cropping methods are practiced

    B. Bio fertilizers, like nitrogen fixing microbes are used to enrich the soil with nutrients

    C. Herbicides and pesticides are used to kill weeds and pests

    D. Neem leaves or turmeric powder is used in the storage of food grains

**Question:68**

Which is world's first Solar-Powered Airport?

    A. Chennai

    B. Delhi

    C. Cochin

    D. Lucknow

**Question:69**

Which of the following cannot be the value of a probability**:**

    A. 2 / 5

    B. – 0.5

    C. 15%

    D. 0.7

**Question:70**

In India, which plant is mainly cultivated for bio-diesel?

    A. Neem

    B. Eucalyptus

    C. Jatropha

    D. Banyan Tree

**Question:71**

Smallest number that can be expressed in two different ways as the sum of two cubes?

A. 1279

B. 1927

C. 1729

D. 1972

**Question:72**

Who invented Crescograph?

A. Dr. C. V. Raman

B. Dr. J. C. Bose

C. Dr. B. P. Pal

D. Dr. P. K. Sen

**Question:73**

If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of k is _____

A. 10

B. -10

C. 5

D. -5

**Question:74**

Name the first rocket that was launched from Thumba on November 21, 1963?

A. Avatar

B. Rohini

C. Nike Apache

D. Gagan

**Question:75**

Replace the question mark with correct option

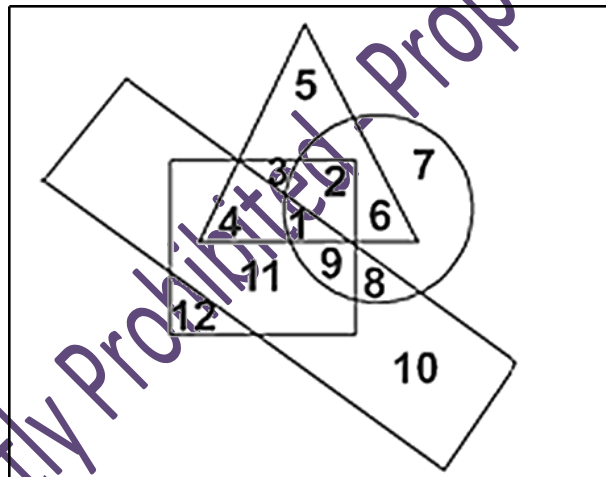| K7 | L4 | M10 |
|----|----|-----|
| L8 | M5 | K12 |
| M9 | L6 | ? |

A. K24

B. L14

C. K14

D. M14

**Question:76**

Entomology is the scientific study of ?

A. Insect

B. Birds

C. Bees

D. Fossils

**Question:77**

In the given diagram, the circle stands for employed, square for punctual, triangle for urban and the rectangle for honest people. Different regions in the diagram are numbered from 1 to 12. Region 4 is best described as consisting of _____.



A. People who are non-urban, honest, unemployed and punctual.

B. People who are unemployed, urban, honest and punctual

C. People who are urban, punctual, honest and employed.

D. People who are unemployed, urban, punctual and dishonest

**Question:78**

Wildlife Protection Award is instituted by Govt. of India in the name of _____?

A. Amrita Devi Bishnoi

B. Kanchan C. Bhattacharya

C. Bhawana Kanth

D. Avani Chaturvedi

## Question:79

A train is travelling at a constant speed covers a distance of 320 km in 6 hours 40 minutes. The distance covered by the train in 1 hour 15 minutes is

A. 320 km

B. 120 km

C. 100 km

D. 60 km

## Question:80

Sammohini is used in Ayurveda for?

E. Rejuvenation Therapy

F. Anesthesia

G. Psychiatry

H. Pediatrics