MANAV RACHNA INTERNATIONAL SCHOOL
Scholarship Test Paper
For Grade – VIII (Session 2022-23)
Current Grade of the Student – VII (Session 2021-22)

Date: 19.02.2022
Duration: 2 Hours **M.M.: 100**

KINDLY FILL IN THE DETAILS

Name: _____

Father's Name: _____

Mother's Name: _____

Examination Centre: Manav Rachna International School _____

Name and Signature of the Invigilator: _____

GENERAL INSTRUCTIONS:

This paper is divided into 4 sections

SECTION – A: Logic and Reasoning: **20 marks** (Each question carries 2 marks)
SECTION – B: English: **20 marks** (Marks have been mentioned against the questions)
SECTION – C: Math: **30 marks** (Each question carries 1 mark)
SECTION – D: Science: **30 marks** (Each question carries 1 mark)

- All sections are compulsory.
- Read each question carefully before answering.
- **Objective Questions need to be tick marked in the question paper itself and submitted.**
- **Subjective Questions need to be attempted in the answer sheets provided and submitted.**

SECTION A
LOGIC AND REASONING

Q1. **Read the passage carefully and answer the question:**

Five roommates Rohit, Salma, Tarun, Umang, and Veronica each do one housekeeping task mopping, sweeping, laundry, vacuuming, or dusting one day a week, Monday through Friday.

* Veronica does not vacuum and does not do her task on Tuesday.
* Salma does the dusting, and does not do it on Monday or Friday.
* The mopping is done on Thursday.
* Tarun does his task, which is not vacuuming, on Wednesday.
* The laundry is done on Friday, and not by Umang.
* Rohit does his task on Monday.

What day is vacuuming done?

a) Friday b) Monday c) Tuesday d) Wednesday

Q2. Look at this series: U32, V29, __, X23, Y20, ... What number should fill the blank?

a) W26 b) W17 c) Z17 d) Z26

Q3. Look at both the letter pattern and the number pattern below. Fill the blank in the middle of the series.
DEF, DEF_2, DE_2F_2, _____, $D_2E_2F_3$

a) DEF_3 b) D_3EF_3 c) D_2E_3F d) $D_2E_2F_2$

Q4. Translate from an imaginary language into English. Then, look for the word elements that appear both on the list and in the answer choices. Here are some words translated from an artificial language.
jalkamofti means happy birthday
moftihoze means birthday party
mentogunn means goodness

Which word could mean "happiness"?

a) Jalkagunn b) Mentohoze c) Moftihoze d) Hozemento

Q5. In Sameer's opinion, his weight is greater than 65 kg but less than 72 kg. His brother doesn't agree with Sameer and he thinks that Sameer's weight is greater than 60 kg but less than 70 kg. His mother's view is that his weight cannot be greater than 68 kg. If all are them are correct in their estimation, what is the average of different probable weights of Sameer?

a) 67 kg b) 68 kg c) 69 kg d) Data is inadequate

Q6. Answer the question based on the information provided.

SECTORWISE COMPOSITION OF INDIA'S EXPORTS (IN PERCENTAGE)

Sector	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003
Agriculture and Allied	17.9	18.2	18.2	13.4	12.1
Ores and Minerals	5.2	1.8	2.7	2.8	3.6
Petroleum and Crude	2.3	1.4	3.2	4.9	4.5
Manufactured Goods	73.6	77.6	74.7	76.1	77.4
Other Products	1.0	1.0	1.2	2.8	2.4
Productwise Composition of Exports of the Manufactured Goods Sector (in percentage)					
Product	**1998-1999**	**1999-2000**	**2000-2001**	**2001-2002**	**2002-2003**
Leather Products	7.1	5.5	5.0	4.4	3.8
Chemicals	8.8	7.8	9.2	9.8	10.1
Engineering Goods	12.5	13.6	13.2	15.7	16.6
Textiles	14.0	13.7	13.6	11.8	11.8
Readymade Garments	12.3	11.6	13.1	11.4	10.4
Gems and Jewellery	15.3	16.6	17.8	16.8	18.3
Others	30.0	31.2	28.1	30.1	29
Total	100	100	100	100	100

By what percentage has the export of petroleum and crude in India increased from 1998- 1999 to 2002- 2003?

a) 95.65% b) 78.85% c) 81.45% d) Data inadequate

Q7. If it is possible to make only one meaningful word from the first, the fifth, the seventh, the eighth and the eleventh letters of the word DEPARTMENTAL, first letter of the word is your answer.

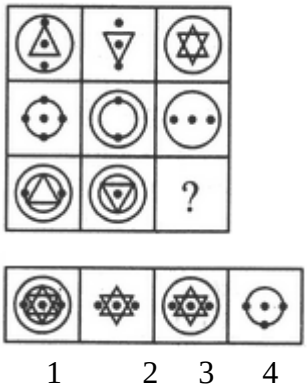
a) A b) D c) R d) None of these

Q8. Which number will replace the question mark?

3	?	5
5	4	7
4	4	4
60	96	140

a) 3 b) 6 c) 9 d) 12

Q9. Select a suitable figure from the four alternatives that would complete the figure matrix.



a) 1 b) 2 c) 3 d) 4

Q10. In each of the following items, some parts have been jumbled up. Re-arrange these parts which are labelled P, Q, R, S to produce the correct sentence.

two triangles (P) / the hourglass is made of (Q)/ in size (R) / which are equal (S)

a) PQRS b) QRSP c) QPRS d) QPSR

SECTION B
ENGLISH

Q1. **Read the passage carefully and answer the questions that follow.**

Most people can remember a phone number for up to thirty seconds. When this short amount of time is removed, the numbers are erased from memory. How did the information get there in the first place? Information that makes its way to the short-term memory (STM) does so via the sensory storage area. The brain has a filter which only allows stimuli that is of immediate interest to pass on to the STM, also known as the working memory.

There is much debate about the capacity and duration of the short- term memory. The most accepted theory comes from George A. Miller, a cognitive psychologist who suggested that humans can remember approximately seven chunks of information. A chunk is defined as a meaningful unit of information, such as a word or name rather than just a letter or number. Modern theorists suggest that

one can increase the capacity of the short-term memory by chunking or classifying similar information together. By organizing information, one can optimize the STM, and improve the chances of a memory being passed on to long-term storage.

When making a conscious effort to memorise something, such as information for an exam, many people engage in "rote rehearsal". By repeating something over and over again, one is able to keep a memory alive. Unfortunately, this type of memory maintenance only; succeeds if there are no interruptions. As soon as a person stops rehearsing the information, it has the tendency to disappear. When a pen and paper are not handy, people often attempt to remember a phone number by repeating it aloud.

If the doorbell rings or the dog barks to come in before a person has the opportunity to make a phone call, he will likely forget the number instantly. Therefore, rote rehearsal is not an efficient way to pass information from the short-term to long-term memory. A better way is to practice "elaborate rehearsal". This involves assigning semantic meaning to a piece of information so that it can be filed along with other pre-existing long-term memories.

Encoding information semantically also makes it more retrievable. Retrieving information can be done by recognition or recall. Humans can easily recall memories that are stored in the long-term memory and used often. However, if a memory seems to be forgotten, it may eventually be retrieved by prompting. The more cues a person is given (such as pictures), the more likely a memory can be retrieved. This is why multiple-choice tests are often used for subjects that require a lot of memorization.

Answer the following questions briefly:

i. According to the passage, how do memories get transferred to the STM? 1
ii. Where can memory be stored? 1
iii. Why does the author mention a dog's bark? 1
iv. Define rote rehearsal. Is it useful? 2
v. How do theorists believe a person can remember more information in a short time? 1
vi. How can a lost memory be retrieved? 2
vii. What is an efficient way to pass information from the short-term to long-term memory and how is it efficient? 2

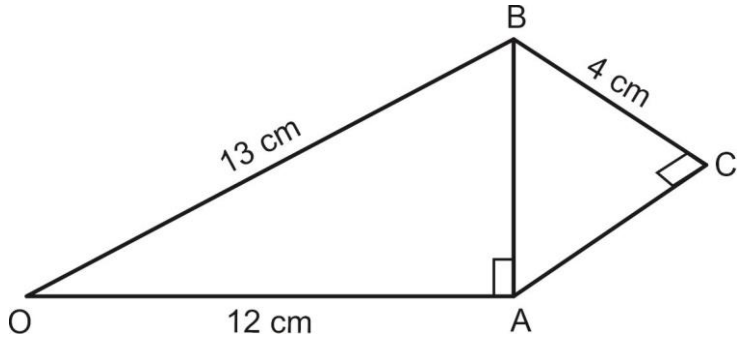
Q2. As a responsible citizen of the world, who is concerned with conservation of environment, write your thoughts regarding the life style and social changes that will conserve environment. Please write in the form a paragraph (150-200words). 10

SECTION C
MATH

Q1. The circumference of a circle is numerically equal to the area of a circle. Find the radius:

a) 5cm b) 7cm c) 2cm d) 7.4 cm

Q2. In the given figure, OA = 12cm, OB = 13cm. Find AC if BC = 4cm.



a) 13cm b) 4.2cm c) 3cm d) 5cm

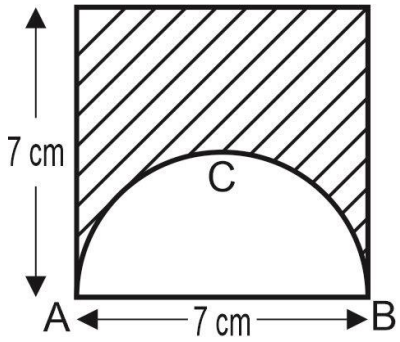
Q3. Geeta had 102 marbles and Sita had 33 marbles. Geeta gave some marbles to Sita so that Geeta ended with twice as many marbles as Sita. How many marbles did Geeta give to Sita?

a) 5 b) 12 c) 15 d) 25

Q4. The value of the numeral MDCCLXXXVI is

a) 2786 b) 1786 c) 0786 d) 3686

Q5. Find the area of shaded region where ACB is a semi-circular arc:



a) $10.5cm^2$ b) $29.75cm^2$ c) $7\pi cm^2$ d) $40cm^2$

Q6. What is the mean of first five prime numbers?

a) 3.6 b) 3.7 c) 5.6 d) 5.7

Q7. Write is the number of diagonals in an octagon?

a) 25 b) 8 c) 7 d) 20

Q8. The C.P. of a black scooter is Rs. 40,000. A man who owns two black scooters sold the first scooter at a loss of 5% and the second scooter at a gain of 7%. Find his overall gain or loss percent.

a) 1% b) 10% c) 0.1% d) 2%

Q9. The square of the expression:

$$\frac{(22.7)^2-(18.7)^2}{(0.25)^2+(0.25)(41.15)}$$ is

a) 100 b) 200 c) 400 d) 256

Q10. What is the LCM of two consecutive numbers?

a) Their Product b) 1
c) can't be determined d) H.C.F.

Q11. A man is standing facing East. If he takes 630° rotation clockwise which direction will he face?

a) East b) West c) North d) South

Q12. The difference between two numbers is 7 and their sum is 35. What will be their product?

a) 324 b) 294 c) 79 d) 245

Q13. A rectangular lawn in 30m by 20m. It has two roads each 2m wide running in the middle of it, one parallel to the length and the other parallel to the breadth. Find the area of the roads.

a) $98cm^2$ b) $96cm^2$ c) $76cm^2$ d) $95m^2$

Q14. If the day on 10 February 2020 was Monday. What was the day on 11 March 2021?

a) Friday b) Monday c) Thursday d) Tuesday

Q15. What is the increase % in area of triangle if its each side is tripled?

a) 900% b) 800% c) 600% d) 400%

Q16. Find the area of an isosceles right angled triangle whose perimeter is $12\left(1+\sqrt{2}\right)$ cm.

a) $24cm^2$ b) $12cm^2$ c) $30cm^2$ d) $36cm^2$

Q17. Find the diagonals of a rhombus whose area is $24cm^2$ and perimeter is 20cm.

a) 2cm and 12cm b) 4m and 6cm c) 4cm and 12 cm d) 6cm and 8cm

Q18. Factorise: $(a-b)^3+(b-c)^3+(c-a)^3$

a) 3 (a – b) (b – c) (c – a) b) 3abc
c) abc d) $(abc)^2$

Q19. What is the median of the data using empirical formula, when it is given that mode = 35.3 and mean = 30.5?

a) 32.1 b) 33 c) 34.9 d) 39.7

Q20. If $x^2+\frac{1}{x^2}=18$, then find the value of $x-\frac{1}{x}$

a) ± 4 b) 4 c) – 4 d) $\sqrt{64}$

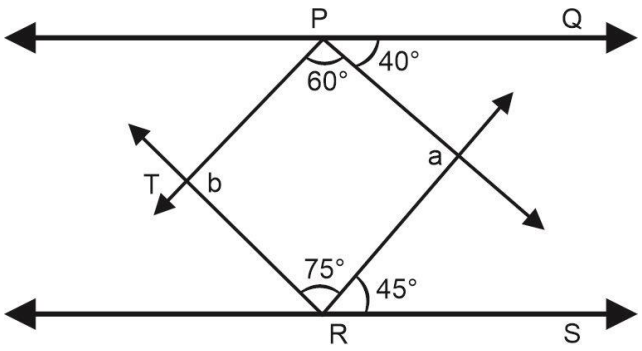
Q21. What will be the unit digit of $(14)^{124}\times(29)^{123}$?

a) 2 b) 4 c) 6 d) 8

Q22. How many numbers upto 100 are coprime to 19?

a) 90 b) 98 c) 95 d) 76

Q23. If PQ | | RS, then find the values of ‘a’ and ‘b’



a) a = 100° b = 80° b) a = 80° b = 100°
c) a = 140° b = 85° d) a = 85° b = 140°

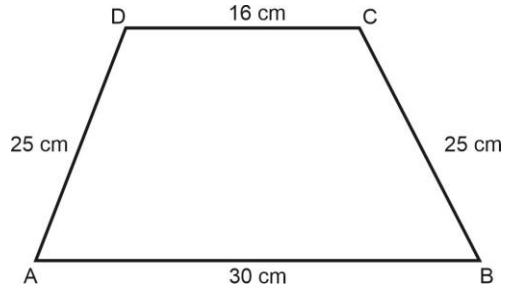
Q24. $\sqrt{1+x^2}=5$, what are the possible values of x?

a) $2\sqrt{6}cm$ b) $\pm 2\sqrt{3}cm$ c) $\sqrt{26}cm$ d) $\pm 2\sqrt{6}cm$

Q25. If $p(x) = x^2 - 4x + 7$, find $p(2) - p(1) + p(½)$

a) 18 b) $\frac{17}{4}$ c) $\frac{27}{3}$ d) $\frac{-27}{3}$

Q26. ABCD is an isosceles trapezium with legs 25cm and bases 16cm and 30 cm. What is the area of trapezium ABCD?

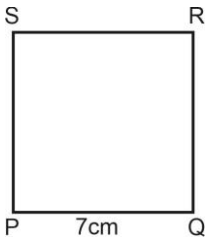


a) $225cm^2$ b) $552cm^2$ c) $580cm^2$ d) $220cm^2$

Q27. The difference between two angles of a triangle whose magnitude is in the ratio of 10:7 is 20° less than the third angle. The third angle is:

a) 80° b) 56° c) 44° d) 70°

Q28. In the given figure PQRS is a square whose side is 7cm. Find the area of semicircle drawn on PR.



a) $49cm^2$ b) $39cm^2$ c) $77cm^2$ d) $38.5cm^2$

Q29. A cylindrical well 7m in diameter and 10m deep is dug and the mud taken out is evenly spread on a rectangular ground measuring 22m x 10m. Find the raised height of the ground after spreading the mud.

a) 3.5 m b) 8 m c) π m d) 7 m

Q30. There are 100 students in a school. Food for all of them is for 20 days. If 25 more students join them, the food available will last for:

a) 4 days b) 16 days c) 20 days d) 25 days

SECTION D
SCIENCE

Q1. Rudra had an appointment with the doctor at the clinic at 4:00 p.m. If he moves at a rate of 20 metres per minute, he will reach the destination 5 minutes late and if he moves at a rate of 30 metres per minute, he will reach the destination 4 minutes prior. What is the distance between Rudra's home and doctor's clinic?

a) 540 m b) 450m c) 640m d) 460m

Q2. 'X' is created by wrapping up an insulated wire over an iron nail. When current is passed through the wire, it could attract small iron nails. If left connected to a cell for some time, it consumes the cell. Identify the correct statement about 'X':

a) 'X' is an electromagnet, its strength decreases if current passed through it decreases.
b) 'X' is an electromagnet, its strength increases if current passed through it decreases.
c) 'X' is an electric fuse, it melts when current is increased.
d) 'X' is an electric fuse, it's rating can be increased by increasing the number of turns.

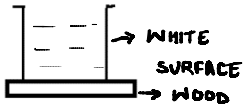
Q3. Ram performed an experiment, where he connected an electric bulb with a battery and a key. On switching the key ON, he held a thermometer closer to the bulb for some time and noted the rise in temperature. What is the aim of the experiment?

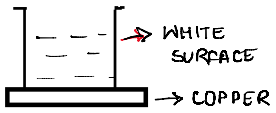
a) To determine the brightness of the bulb
b) To show amount of electric current passed to the bulb
c) To show that electrical energy is converted into heat energy
d) To show that the bulb glows when circuit is switched ON.

Q4. All the beakers given below contain equal volume of water at same temperature. Observe the set ups and identify, which amongst them will show highest temperature?

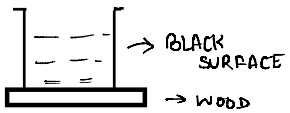
a)

b)

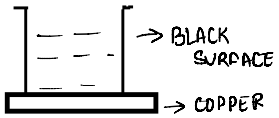




c)



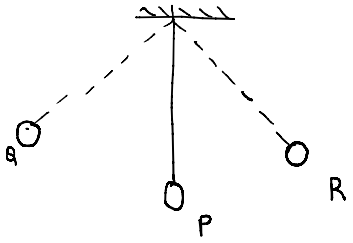
d)



Q5. Which of the following statements is incorrect regarding motion of a particle?

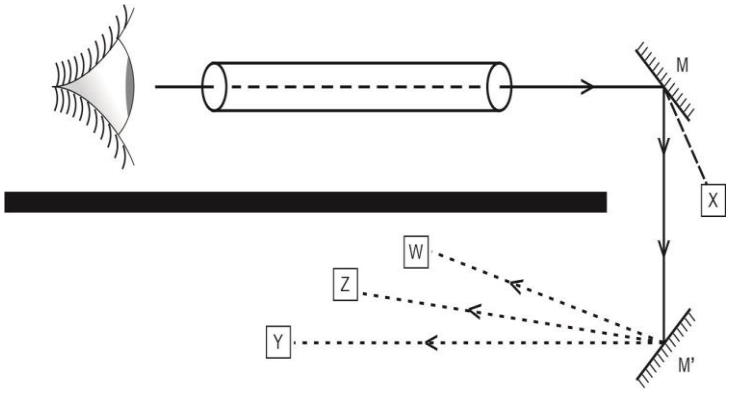
a) All periodic motions are oscillatory in nature
b) All oscillatory motions are periodic in nature
c) Translatory motion can be rectilinear or curvilinear or both
d) Translatory motion is rectilinear and not curvilinear

Q6. Figure given below describes the extreme and the mean position of an oscillating pendulum. Time taken for 20 oscillations is 100 seconds. What will be the time taken to complete motion of the bob as QPR?



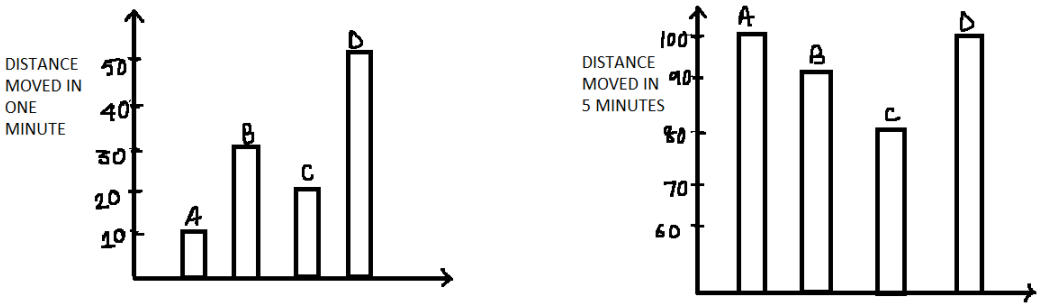
a) 5 seconds b) 2.5 seconds c) 0.2 seconds d) 0.1 seconds

Q7. Ram tried to create a set up using plane mirrors to look at the other side of the walls. Mirrors M and M' are inclined at an angle of 45^{o} to its axis. Which object amongst X, Y, Z ,W will he be able to see through a steel tube.



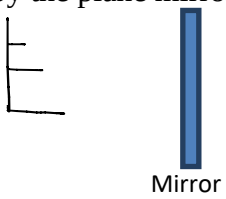
a) X b) Y c) Z d) W

Q8. Carefully observe the bar graphs showing distance moved by A,B,C and D in 1 minute and 5 minutes respectively. Who amongst them is fastest?

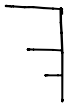


a) A b) B c) C d) D

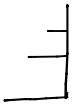
Q9. Identify the image produced by the plane mirror for the below given figure.



a) 

b) 

c) 

d) 

Q10. The ratio of surface area of two bricks X and Y weighing 5 N each is 2:5. Which of the following is correct for the pressure exerted by the two bricks?

a) $P_x = P_y$ b) $P_x > P_y$ c) $P_x < P_y$ d) $P_x = P_y = 0$

Q11. A pond located near a factory turned into light red because -

a) Release of basic substances from the factory
b) Release of acidic substances from the factory
c) Release of neutral substances from the factory
d) Release of nutritive substances from the factory

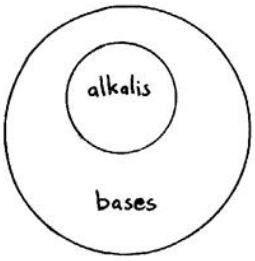
Q12. Presence of effervescence happens in which of the following chemical reaction?

a) When zinc reacts with copper sulphate
b) When sodium hydroxide reacts with hydrochloric acid
c) When potassium chloride reacts with silver nitrate
d) When vinegar reacts with baking soda.

Q13. Read the following statements and choose the correct option given below:
Statement 1: Neutralised salt is formed when strong acid reacts with strong base.
Statement 2: Basic salt is formed when strong acid reacts with weak base.

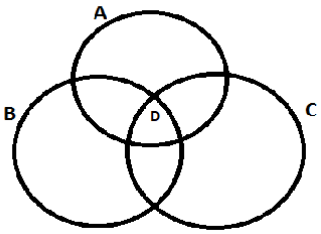
a) Both statements 1 and 2 are true and statement 2 is the correct explanation of statement 1
b) Both statement s 1 and 2 are true but statement 2 is not the correct explanation of statement 1
c) Statement 1 is true and statement 2 is false.
d) Both the given statements 1 and 2 are incorrect.

Q13. What does the given figure indicate?



a) Alkalis and bases are same
b) Alkalis are bases
c) Bases are alkalis
d) Alkalis and bases are totally different

Q14. The group bifurcation of the given figure is
A- liquid metal
B-High coefficient of expansion
C-High boiling point
Locate mercury in the appropriate group



a) Group A
b) Group B
c) Group C
d) Group D

Q15. Choose the correct method to prevent the formation of iron oxide from iron permanently.

a) Keeping iron in open
b) Keeping iron in salt water
c) Painting the iron
d) Galvanizing the iron

Q16. Shyam was holding the ink dropper and it accidentally fell in the glass of water kept nearby. He was surprised to see the spreading of ink in water. So his friend made him understand the process that was happening in the glass. Which of the following could be the process explained by his friend?

a) Conduction
b) Convection
c) Dispersion
d) Diffusion

Q17. Raj has heated a chemical ribbon present in the laboratory and then the ash collected, was dissolved in water. Later he mixed that solution with vinegar. This process is an example of which of the following types of chemical reaction?

a) Displacement reaction
b) Neutralization reaction
c) Decomposition reaction
d) Combination reaction

Q18. Which metal reacts readily with cold water?

a) Gold b) Silver c) Magnesium d) Calcium

Q19. Which zone of a flame does a goldsmith use for melting gold and silver?

a) Outer zone b) Middle zone c) Inner zone d) Lower zone

Q20. Valence electrons in S^{2-} ion is:

a) 9 b) 10 c) 8 d) 7

Q21. A beheaded cockroach continues to respire because

a) It respires through nostrils
b) It respires through wings
c) It respires through spiracles
d) It respires through setae

Q22. Choose the correct option from the following:
For resting heart rate in

i. 0 to 1 month old: 70 to 190 beats per minute
ii. 1 to 11 months old: 80 to 160 beats per minute
iii. Children 5 to 6 years old: 75 to 115 beats per minute
iv. An adult : 60 to 100 beats per minute

a) Only (i)
b) Both (i) and (iii)
c) Only (iv)
d) All (i), (ii), (iii) and (iv) are correct

Q23. If the pendulum oscillates 120 times in 1 minute, its frequency will be

a) 20 Hz b) 60 Hz c) 240 Hz d) 2 Hz

Q24. Which of the given pollination can occur in hermaphrodites?

a) Self-pollination only
b) Cross pollination only
c) Either (a) or (b)
d) Both (a) and (b)

Q25. Select the option showing correct order of stages of development of a frog.

a) Egg → Larva → Metamorphosis → Adult Frog → Pupa
b) Egg → Larva → Metamorphosis → Adult Frog
c) Egg → Metamorphosis → Larva → Adult Frog
d) Larva → Metamorphosis → Pupa → Egg →Adult Frog

Q26. The decomposition of dead plants in forests is many because of

a) Lightning during storms
b) Osmosis through root hair
c) Microbes present in the soil
d) Stomata present in the leaves

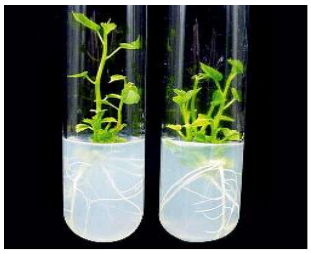
Q27. During inhalation and exhalation, the chest cavity increases and decreases respectively. From the given statements, identify the correct option for external respiration:

a) During inhalation, ribs move outward and diaphragm moves down
b) During exhalation ribs move outwards and diaphragm moves down
c) During inhalation ribs move inward and diaphragm moves down
d) During exhalation ribs move outwards and diaphragm moves up.

Q28. Sheela and her friend were swimming for couple of hours and they noticed a change in their fingers once the hands were taken out of water. Which of the following could be the reason for the change that occurred in fingers?

a) Diffusion
b) Conduction
c) Convection
d) Osmosis

Q29. On a school trip, Raj and his friends visited a farm where they came across bottled plants that are in smaller size than actual. Their teacher made them aware about the method which was adopted for the process. Which of the given option can be the method stated by the teacher?



a) Layering
b) Budding
c) Grafting
d) Tissue culture

Q30. The excretory system of human body consists of the following parts. Arrange them according to the order of their function:

(i) Urethra
(ii) Ureter
(iii) Kidney
(iv) Urinary bladder

a) (i) – (iii) – (iv)-(ii)
b) (ii)- (iii) -(iv) -(i)
c) (iii) – (ii)-(iv)-(i)
d) (iv)- (iii)- (ii) –(i)