Devesh Jindal's
The Weavers Institute
Let's Change the Future

Self-Assessment Test (2023)
Test Code: 2310

BATCH: 10th

DATE -19-03-2023   **DURATION: 1 Hr 30 min**   **MAX. MARKS: 200**

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

INSTRUCTIONS

A. GENERAL:

1. This question paper contains 50 questions.

2. Space is provided for rough work.

3. Blank paper, clipboard, log tables sidled rules, calculators, cellular phones, papers and electronic gadgets in any form are NOT allowed.

4. The answer sheet, a machine-gradable Objective Responsive Sheet (ORS), is provided separately.

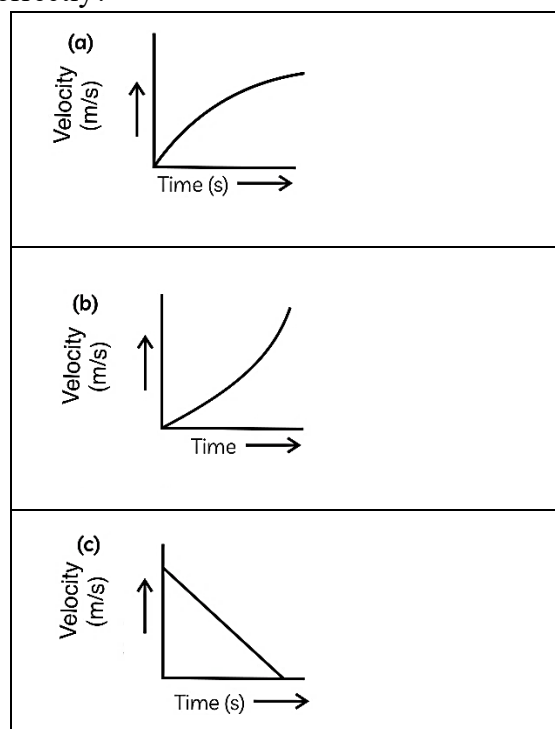5. Do not Tamper/mutilate the ORS or this booklet.

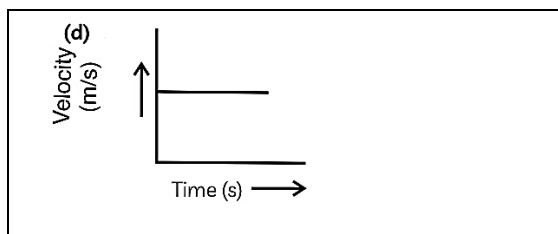## B. Question paper format and marking scheme:

6. The question paper consists of 4 sections (Science with 18 Questions, Mathematics with 12 Questions, Social Science with 15 Questions and Mental Ability with 5 Questions). All questions are MCQ based.

7. For each question in every part, you will be awarded (+4) marks if you darken the bubble corresponding to the correct answer and zero marks if no bubble is darkened. In case of darkening the bubble with incorrect answer, minus one (-1) mark will be awarded.

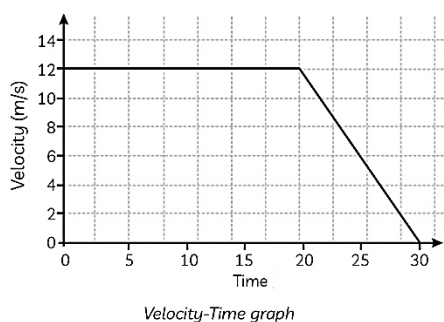**STUDENT NAME**_____

_____ The Weavers

Science

1. The Solubility of salt in 100 gm of water is approximately 40 gm. Akshara is given 300 gm of salt solution with 30% salt concentration. How much amount of More salt Akshara will have to dissolve to make it a saturated solution?
   - (a) 10 gm
   - (b) 30 gm
   - (c) 25 gm
   - (d) Data Insufficient.

2. 12 gm of carbon reacts with 64 grams of sulphur to give 76 gm of carbon disulphide. What will be the amount of carbon disulphide formed if 6 gms of carbon reacts with 16 gms of sulphur?
   - (a) 22 gm
   - (b) 19 gm
   - (c) 20 gm
   - (d) Can't say

3. Analysis revealed 0.056 g of boron and 0.169 g of oxygen in a 0.36 g sample of oxygen and boron compound. Determine the approximate Boron's weight-based percentage composition in Compound.
   - (a) 15
   - (b) 25
   - (c) 20
   - (d) 30

4. What is the ratio of the number of electrons, protons, and neutrons in tritium?
   - (a) 1:2:1
   - (b) 1:1:3
   - (c) 2:2:1
   - (d) 2:2:4

5. A source produces a sound of frequency 12000 Hz & 25 DB. Which of the following will be Harmful for human ear?
   - (i) Doubling the frequency of sound
   - (ii) Doubling the amplitude of sound
   - (a) only (i)
   - (b) only (ii)
   - (c) Either (i) and (ii)
   - (d) only when both (i) and (ii)

6. Identify the correct statement.
   - (a) RER (Rough Endoplasmic Reticulum) is used to make enzymes that are stored in lysosomes.
   - (b) Lipid and protein are produced by the smooth and rough endoplasmic reticulum, respectively.
   - (c) The breakdown of the plasma membrane is linked to the endoplasmic reticulum.
   - (d) The nucleoplasm of a eukaryotic nucleus contains a nucleoid.

7. Which of the following cell organelles is called digestive bags of cell?
   - (a) Nucleus
   - (b) Lysosomes
   - (c) Chloroplast
   - (d) Mitochondria

8. Involuntary muscles are found in:
   - (i) skeletal muscles (ii) Cardiac muscles
   - (iii) striated muscles (iv) smooth muscles
   - (a) (i) and (ii)
   - (b) (ii) and (iii)
   - (c) (ii) and (iv)
   - (d) All of the above except (i)

9. During a desert safari school tour, Amanat was told by a guide that desert plants have a lower rate of water loss. She was told by Devesh that it happens due to the presence of:
   - (a) Cuticle
   - (b) Stomata
   - (c) Photosynthesis
   - (d) Suberin

10. Which of the following figures represents the decreasing Acceleration of a moving object correctly?

(d)

Velocity (m/s)

Time (s) →

11. Manbhav was driving a car to his office when suddenly a boy came in between the road and he applied brakes suddenly to save the child and the car came to rest. The whole scenario was observed by Harman and he draws the velocity-time graph regarding the situation.

Velocity-Time graph

Find the average velocity of the car during its entire journey.

(a) 8 m/s   (b) 9 m/s
(c) 10 m/s   (d) 12 m/s

12. A bullet of 10 g strikes a sand-bag at a speed of 10^3 m/s and gets embedded in sand bag to a depth of 5 cm after travelling. The resistive force exerted by the sand on the bullet

(a) 10^2 N   (b) 10^3 N
(c) 10^4 N   (d) 10^5 N

13. Two objects of masses m_1 and m_2, one hollow and the other one solid respectively, having the same size are dropped simultaneously from heights h_1 and h_2 respectively. Find out the ratio of time they would take in reaching the ground.

(a) $(\frac{m1}{m2})^{1/2}$ (b) $(\frac{h1}{h2})^{1/2}$
(c) $\frac{h1}{h2}$ (d) 1:1

14. An object weighted 40 N on spring balance was dipped in water (density 1000 kg/m^3), the volume of water rose by 1 lt. What will be the new reading on spring balance?

(a) 10N   (b) 30N
(c) 20N   (d) 50N

15. An trolly was travelling with the speed 'V' on a track. Due to friction b/w the trolly and the track the speed of the trolly was reduced by 20%. What will be decrease in its kinetic energy?

(a) 40%   (b) 20%
(c) 36%   (d) 10%

16. In some far away solar system, there was a planet which had mass three times as that of earth and Radius two times as that of earth. What will be the acceleration due to gravity on that plant, considering the acceleration due to gravity on earth is 10 m/s^2.

(a) 7.5 m/s^2 (b) 60 m/s^2
(c) 15 m/s^2 (d) 2.5 m/s^2

17. Looking at the current situation of Punjab, Which cropping pattern and method of Irrigation will be suitable in region of Punjab?

a) Mixed cropping and River Lift System
b) Crop rotation and Canal System
c) Intercropping and Canal System
d) Crop Rotation and Ground water

18. What is the energy consumed by a person of mass 70 kg running up 60 stairs each of height 30 cm in 40 seconds?

(a) 4.5 W   (b) 315 W
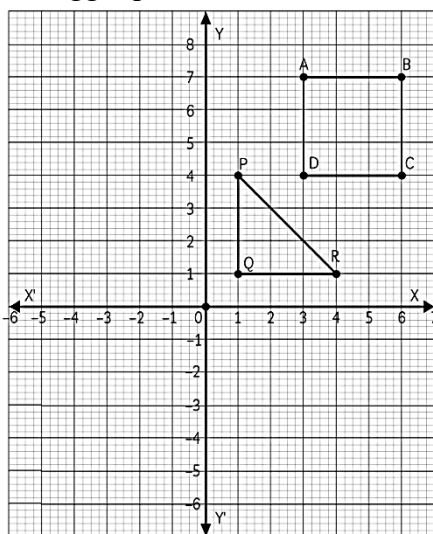(c) 12600 J   (d) 315 J

Mathematics

19. $3^{2\sqrt{x^2-3}} \times 3 - 3^{\sqrt{x^2-3}} \times 3 + 6\sqrt{x} - 18 = \sqrt{x}\left(9^{\sqrt{x^2-3}} - 3^{\sqrt{x^2-3}}\right)$ and find the positive values of x.
    (a) 2 and 6   (b) 2 and 7
    (c) 2 and 8   (d) 2 and 9

20. The polynomial $(x - a)$ is a factor of the polynomial $x^4 - 2x^2 + kx + k$, where k is a constant. Which of these is the correct relation between a and k?
    (a) $k = \frac{a^2(2-a^2)}{1+a}$ (b) $k = \frac{a^2(2+a^2)}{1+a}$
    (c) $k = \frac{a^2(2+a^2)}{1-a}$ (d) $k = \frac{a^2(2+a^2)}{1-a}$

21. The committee of the society decides to construct two different parks for children and adults respectively as shown in the figure. If the graph scales 9 times i.e. the one smallest square = 9 units. The area of the bigger park is
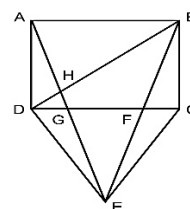

    (a) 512   (b) 90
    (c) 729   (d) 27

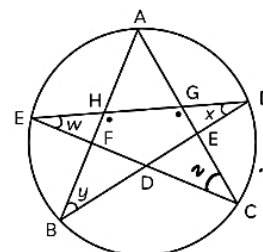22. The class-marks of five classes are; 9.5, 14.5, 19.5, 24.5 and 29.5 The upper class-limit of the fourth class is:
    (a) 27   (b) 22
    (c) 32   (d) 34

23. Ram has a wooden box on which he exactly fitted a triangle and joined with a straight line to prove that AE=BE and also, find $\angle AHD$.
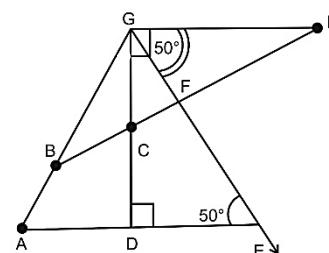

    (a) 120   (b) 90
    (c) 60   (d) 100

24. The given figure represents a pattern of stars A,B,C,D and E points A and B, A and C, E and D, E and C, B and D have been joined. Find A in terms of x, y, w and z.

    (a) $90° + (x + y + w + z)$
    (b) $180° - (x - y) - (w - z)$
    (c) $90° - (x + y + w + z)$
    (d) $180° - (x + y + w + z)$
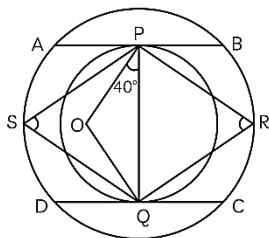
25.

    if GF = GC, then the angle $\angle DCF$ is:
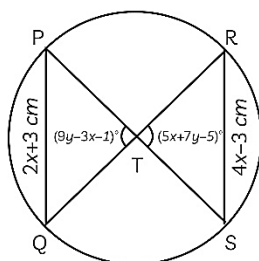   (a) 70°   (b)110°
    (c)140°   (d) 40°

26. For an interior design project, Harshita , being an architect, drew a circular design of a building. In this picture two circles with centre O have been drawn.

Find the value of ∠PSQ.

(a) 60° (b)100°
(c)130° (d) 50°

27. In the figure given below, PQ and RS are equal chords of a circle with centre T. Find ∠PTQ?

(a) 80 (b) 70
(c) 90 (d) 95

28. From a point in the interior of an equilateral triangle, perpendicular lines are drawn on the three sides. The lengths of the perpendiculars are 8 cm, 10 cm, and 11 cm. Find the area of triangle

(a) 512 cm^2 (b) 486 cm^2
(c) 610 cm^2 (d) 924 cm^2

29. Manav has a metallic hemispherical bowl that is made up of steel. The total sheet used in making the bowl is 2736 π cm^3. In this bowl, she can hold 1152 π cm^3 kheer. Find the thickness (in cm^3) of bowl.

(a) 6 cm (b) 8 cm
(c) 7 cm (d) 10 cm

30. Two dices are thrown simultaneously. What is the probability of occurring 3 on at least one of the dice?

(a)$\frac{11}{36}$ (b) $\frac{12}{36}$

(c) $\frac{1}{6}$ (d) $\frac{10}{36}$

Social Science

31. Maximilien Robespierre was a controversial figure in the French Revolution. He was a leading member of the Public Safety Committee which oversaw the Regin of Terror. In this context which political ideology did Robespierre subscribe to?
    (a) Republican
    (b) Democrat
    (c) Communism.
    (d) None of the above

32. The ideas of Karl Max from the practical application in socialist agendas was:
    (a) Banishment of private property and unification of labour.
    (b) Collectivisation of agriculture
    (c) Struggle for food for everyone
    (d) Leninism

33. We have read that Ganga is a Himalayan river. Majority of its tributaries originate at one or the other place in Himalayas. Ganga receive tributaries for a very long course. In this context which of the following is not one of the left bank tributaries of Ganga?
    (a) Gandak
    (b) Yamuna
    (c) Ghaghara
    (d) Kosi

Assertion Reason (A-R)

In the following questions there are two statements marked as Assertion (a) and Reason (R). Read the statements and choose the correct option.
(a) Both (a) and (R) are true and (R) is the correct explanation of (a).
(b) Both (a) and (R) are true but (R) is not the correct explanation of (a).
(c) (a) is correct but (R) is wrong.
(d) is wrong but (R) is correct.

34. **Assertion (a):** The schooling system of Nazi Germany popularised hatred against Jews.
    Reason (R): Jews were the killers of Christ and were considered as usurers.

35. **Assertion(A):** Many Mughal paintings showed princes and emperors enjoying a hunt of animals such as tigers.
    Reason (R) : Britishers also supported the hunting of animals.

36. Western Ghats are the great elevation. When the moisture laden winds hit them form the south west, rainfall occurs. This type of rainfall is known as…………….
    (a) South west winds
    (b) Surface winds
    (c) Arabian sea branch
    (d) Orographic rain

37. It is a well-known fact that there are brakes in monsoon, which means that in between rains there are rainless intervals. The reason for the 'break in monsoon' is:
    (a) Western cyclonic Disturbances
    (b) Southern oscillations
    (c) Monsoon trough
    (d) All of the above

38. Which of the following is not a characteristic of NPP?
    (a) Education on sexually transmitted disease
    (b) achieving universal immunisation of children against all vaccine preventable diseases
    (c) Decreasing death rate by providing better health facilities to elderly people
    (d) Responsible and planned parenthood

39. The constituent Assembly was quite a representative body of the nation. It was dominated by members of Congress. Which of the following does not represent the way in which the assembly functioned?
    (a) Authoritarian manner
    (b) Systematic manner
    (c) Consensual manner
    (d) Open manner

40. It is alleged by other political parties in India that the principal political party of India, that is the Congress Party, is not a Democratic Party. In your opinion, what do the opponents allegedly want to convey to the citizens regarding the working of the Congress Party?
    (a) That Congress is corrupt.
    (b) That Congress is weak.
    (c) That consultation does not take place properly within the party.
    (d) All of the above

41. One Legislative Act of Colonial India has had a profound impact even on the constitution. The Framers of the Constitution borrowed heavily from this Act. This Act was………..
    (a) Government of India act 1919
    (b) Vernacular press act
    (c) Indian independence act 1947
    (d) Government of India Act 1935

42. Why do miscreants indulge in electoral frauds like rigging?
    (a) They believe they can do better development of the region.
    (b) They want to win power for them anyhow.
    (c) Both (a) and (b).
    (d) Neither (a) nor (b).

43. Which of the following statements about the judiciary is false?
    (a) The Supreme Court must review every bill passed by the Parliament for its constitutional validity.
    (b) A law can be struck down by the judiciary if it violates the spirit of the Constitution.
    (c) The judiciary is separate from the executive branch.
    (d) If a citizen's rights are violated, any person can file a writ on behalf of the public interest in the court.

44. Which one of the following is an example of reduction in poverty in India.
    (i) The percentage of people below poverty line are significantly reduced.
    (ii) More and more people are able to meet their calorie requirement.
    (iii) There is a significant downfall in cases of discrimination.
    (a) (i), (ii) and (iii)
    (b) Only (ii) and (iii)
    (c) Only (i) and (ii)
    (d) Only (ii)

45. High incidence of malnutrition prevails among whom?
    (a) A high incidence of malnutrition prevails among women.
    (b) A high incidence of malnutrition prevails among children.
    (c) A high incidence of malnutrition prevails among men.
    (d) A high incidence of malnutrition prevails among elderly people.

Mental Ability

46. Govind went 15 km from his house to North. Then, he turned west and covered 10 km. Then he turned South and covered 5 km. Finally, turning to his left, he covered 10 km. Then, he turned South and covered 5 km. In Which direction is he from his house?
   (a) East   (b) West
   (c) North   (d) South

47. If you write down all the numbers from 1 to 100, then how many times do you write 3?
   (a) 11   (b) 20
   (c) 18   (d) 21

48. 'Fire' is related to 'Ashes' in the same way as 'Explosion' is related to
   (a) Sound   (b) Debris
   (c) Destruction   (d) Flame

49. There are 50 students admitted to a nursery class. Some students can speak only English and Some can speak only Hindi. Ten students can speak both English and Hindi. If the number of student who can speak English is 21, then how many students can speak Hindi, how many can speak only Hindi and how many can speak only English?
   (a) 39,29 and 11 respectively
   (b) 37,27 and 13 respectively
   (c) 28,18 and 22 respectively
   (d) 21,11 and 29 respectively

50. In the following question, Δ means 'is greater than, % means 'is lesser than',   means 'is equal to', = means 'is not equal to', + means 'is a little more than', × means 'is a little less than'. Choose the correct alternative in each of the following questions
   If ac % bd and ab Δcd, then
   (a) b   c   (b) b Δ c
   (c) a % c   (d) Can't say

Rough Work

Rough Work

Rough Work