



MACRO VISION ACADEMY, BURHANPUR

Sample Paper 2021-22

Office Use

Class: X

Time: 90 min

M.M.: 50

Student's Name:- _____ Father's Name:- _____

City:- _____ Mobile No:- _____ Exam Date:- _____

Studying in Class: _____ Appearing for class:- _____ Board: MP/CBSE/Other _____

GENERAL INSTRUCTIONS:

- The question paper has 50 questions in all. Each question carries 1 mark.
- All questions are compulsory.
- Section A contains 10 questions of Mathematics.
- Section B contains 5 questions of Physics.
- Section C contains 5 questions of Chemistry.
- Section D contains 5 questions of Biology.
- Section E contains 10 questions of Social Science.
- Section F contains 5 questions of MAT (Mental Ability Test).
- Section G contains 10 questions of English.

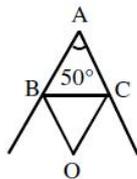
Mathematics (10)	Physics (05)	Chemistry (05)	Biology (05)	So. Science (10)	MAT (05)	English (10)	OBTAINED (50)

Section A

Mathematics

- The number of consecutive zeros in $2^3 \times 3^4 \times 5^2 \times 7$, is
(a) 3 (b) 2 (c) 5 (d) 4
- If $a = 3$ and $b = -2$, then the values of $a^a + b^b$ is
(a) $\frac{109}{4}$ (b) $\frac{109}{8}$ (c) $\frac{110}{8}$ (d) $\frac{118}{16}$
- The products of $(x-1)(x+1)(x^2+1)(x^4+1)$ is
(a) x^8 (b) $x^6 - 2$ (c) $x^{10} - 10$ (d) $x^8 - 1$
- Which one of the following is a polynomial?
(a) $\frac{x^2}{2} - \frac{2}{x^2}$ (b) $\sqrt{2x} - 1$ (c) $x^2 + \frac{3x^{\frac{3}{2}}}{\sqrt{x}}$ (d) $\frac{x-1}{x+1}$
- How many linear equations are satisfied by $x = 2$ and $y = -3$?
(a) Only one (b) Two (c) Three (d) Infinitely many

6. In $\triangle ABC$, $\angle A = 50^\circ$ and the external bisectors of $\angle B$ and $\angle C$ meet at O as show in fig. The measure of $\angle BOC$ is



- (a) 40° (b) 65° (c) 105° (d) 140°
7. Angle formed in minor segment of a circle, is
 (a) Acute (b) Obtuse (c) Right angle (d) None of these
8. The length of each side of an equilateral triangle of area $4\sqrt{3}cm^2$, is
 (a) 4 cm (b) $\frac{4}{\sqrt{3}}cm$ (c) $\frac{\sqrt{3}}{4}cm$ (d) 3 cm
9. Given the mean (30), the mode (35). What is the median?
 (a) 30 (b) 31.69 (c) 40 (d) None of these
10. A month is selected at random in a year. The probability that it is March or October, is
 (a) $\frac{1}{12}$ (b) $\frac{1}{6}$ (c) $\frac{3}{4}$ (d) None of these

Section B

Physics

Passage based questions

DIRECTIONS (Qs. 11 to 12): Read the passage(s) given below and answer the questions that follow.

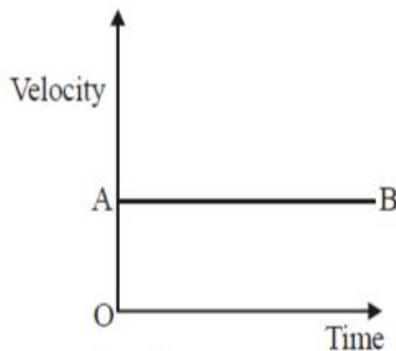
A substance which can flow is called a fluid. All liquids and gases are thus fluids. The tendency of a fluid to exert an upward force on a body immersed partly or wholly in it is called buoyancy. The resultant upward force experienced by a body when immersed in a fluid is called buoyant force or upward thrust. Archimedes's principle: When a body is immersed fully or partially in a fluid, it experiences an upward force that is equal to the weight of the fluid displaced by it.

Applications of Archimedes's principle: Archimedes's principle is applied for (1) Determination of density and relative density of substances (2) Design of ships and submarines

11. Buoyant force on an object due to a fluid always acts:
 (a) in the downward direction (b) side ways
 (c) in the upper direction (d) None of these
12. Archimedes's principle is not applied for
 (a) Determination of relative density of substances
 (b) Design of ships
 (c) Design of submarines
 (d) Determination of fluid pressure

13. Choose incorrect statement:
- (a) A body has a uniform motion if it travels equal distances in equal intervals of time.
 - (b) A body has a non-uniform motion if it travels unequal distances in equal intervals of time.
 - (c) Distance travelled by a moving body in (one second) unit time is called speed.
 - (d) Average speed is given by the arithmetic mean of initial speed and final speed for a given period of time.

14. In the given velocity-time graph AB shows that the body has



- (a) Uniform acceleration
 - (b) Uniform deceleration
 - (c) Uniform velocity throughout the motion
 - (d) None of these
15. An object of 2 kg is moving with a velocity of 5 m/s. If its velocity is doubled, the kinetic energy will become
- (a) 100 J
 - (b) 25 J
 - (c) 200 J
 - (d) 2.5 J

Section C

Chemistry

16. Which of the following has maximum number of atom?
- (a) 18 g H₂O
 - (b) 18 g of O₂
 - (c) 18 g of CO₂
 - (d) 18 g of CH₄
17. Percentage of calcium in calcium carbonate is
- (a) 40
 - (b) 30
 - (c) 48
 - (d) 36
18. Which of the following are physical changes?
- (i) Melting of iron metal
 - (ii) Rusting of iron
 - (iii) Bending of an iron rod
 - (iv) Drawing a wire of iron metal
- (a) (i), (ii) and (iii)
 - (b) (i), (ii) and (iv)
 - (c) (i), (iii) and (iv)
 - (d) (ii), (iii) and (iv)
19. Which of the following statements are true for pure substances?
- (i) Pure substances contain only one kind of particles
 - (ii) Pure substances may be compounds or mixtures
 - (iii) Pure substances have the same composition throughout
 - (iv) Pure substances can be exemplified by all elements other than nickel
- (a) (i) and (ii)
 - (b) (i) and (iii)
 - (c) (iii) and (iv)
 - (d) (ii) and (iii)

20. Two substances, A and B were made to react to form a third substance, A_2B according to the following reaction :-
- $$2A + B \rightarrow A_2B$$
- Which of the following statements concerning this reaction are incorrect?
- (i) The product A_2B shows the properties of substances A and B
(ii) The product will always have a fixed composition
(iii) The product so formed cannot be classified as a compound
(iv) The product so formed is an element
- (a) (i), (ii) and (iii) (b) (ii), (iii) and (iv) (c) (i), (iii) and (iv) (d) (ii), (iii) and (iv)

Section D

Biology

21. Which of the following organelle does not have membrane?
(a) Ribosome (b) Nucleus Chloroplast (d) Mitochondria
22. Root hair absorbs water from soil through -
(a) Osmosis (b) Active transport (c) Diffusion (d) Endocytosis
23. Which of the following statements is incorrect?
(a) Some tissues in plants divide throughout the life
(b) Cell growth in animals is more uniform as compared to plants
(c) Animals have more dead tissues as compared to plants
(d) There is no demarcation of dividing and non-dividing regions in animals
24. What are the identifying features of meristematic tissues?
(a) thick cellulose wall, small vacuoles, dense cytoplasm, small nuclei
(b) thin cellulose wall, almost no vacuoles, dense cytoplasm, prominent nuclei
(c) thin cellulose wall, no vacuoles, sparse cytoplasm, prominent nuclei
(d) thick cellulose, large vacuoles, sparse cytoplasm, small nuclei
25. One of the following is not an Annelid
(a) Nereis (b) Earthworm (c) Leech (d) Urchins

Section E

Social Science

Read the following paragraph and answer the following questions. (Q.26 till Q.29)

On 5 May 1789, Louis XVI called an assembly of the Estate general to pass proposals for new taxes. A resplendent hall in Versailles was prepared to host the delegates. The first and second estates had 300 representation each and third estate had 600 representatives. Peasants, artists and women were prohibited the entry to the assembly. Their grievances and demands were listed in 40,000 letters. Rousseau in his book the Social contract wrote about the democratic principles. In 1792-93 France became a republic. In 1804, Napoleon became emperor of France.

26. Who was king of France at the time of revolution?
(a) Louis XIV (b) Napoleon (c) Nicholas II (d) Louis XVI
27. In how many estates French society were divided?
(a) One estate (b) two estates (c) three estates (d) four estates

28. Grievances and demands were listed in letters.
 (a) 20,000 (b) 25,000 (c) 30,000 (d) 40,000
29. Who advocated the principle of social contract?
 (a) Voltaire (b) Montesquieu (c) John Locke (d) Rousseau
30. The Standard Meridian of India, 82°30'E passes through which of the following places?
 (a) Kanyakumari in Tamil Nadu (b) Walong in Arunachal Pradesh
 (c) Kachchh in Gujarat (d) Mirzapur in Uttar Pradesh
31. Which of the following trees were promoted for building ships or railways?
 (a) Firs and Pines (b) Bushes and Creepers
 (c) Shisham and Acacia (d) Teak and Sal.
32. A land mass bounded by sea on three sides is referred to as
 (a) Coast (b) Peninsula (c) Island (d) None of the above
33. In Fiji, the vote of an indigenous Fiji has value than that of an Indian Fijian.
 (a) one (b) equal (c) less (d) more.
34. What are options with the President if a bill is sent to him/her for assent?
 A. He/She has to sign it
 B. He/She can send it back to the House for reconsideration
 C. If bill is sent to the President second time he/she has to sign it

Options:

- (a) Only A is true (b) Only A and B are true
 (c) Only B and C are true (d) Only C is true.
35. India is socialist country because
 (a) People have no right to make society
 (b) People have right to change religion
 (c) Wealth is generated socially and shared equally by society
 (d) All of these.

Section F

MAT

36. X introduces Y saying, "He is the husband of the granddaughter of the father of my father".
 How is Y related to X?
 (a) Brother (b) Brother-in-law (c) Son (d) Son-in-law
37. What will come in place of question mark (?) in the following series?
 9, 11, 15, ?, 39, 71
 (a) 29 (b) 23 (c) 21 (d) 27
38. Find out the wrong term in the series 3, 9, 27, 81, 243, 730
 (a) 27 (b) 81 (c) 243 (d) 730
39. Hemant, in order to go to university started from his house which is in the east and came to a crossing. The road to the left ends in a theatre, straight ahead is the hospital. In which direction is the university?
 (a) North (b) South (c) East (d) West

40. In a certain code 'SEQUENCE' is coded as 'FDOFVRFT'. How is 'CHILDREN' coded in that code?
- (a) OFESJMID (b) OFSEMJID (c) OFSEJIMD (d) OFSEJMID

Section G

English

Read the passage given below and answer the questions that follow by choosing the answers from the given options.

SPACE

"It scares me," said Jack Hills, an astronomer at New Mexico's Los Alamos National Laboratory. "It really does." He and the rest of the world had good reason to be worried. Astronomer Brian Marsden, at the Harvard-Smithsonian Center for Astrophysics had just announced that a newly discovered asteroid 1.6 km wide was headed for Earth and might pass as close as 48,000km in the year 2028. "The chance of an actual collision is small," Marsden reported, "but not entirely out of the question."

An actual collision? With an asteroid of that size? It sounded like the stuff of science fiction and grade-B movies. But front-page stories and TV newscasts around the world soon made clear that the possibility of a direct hit and a global catastrophe well within the lifetime of most people on Earth today was all too real.

Then suddenly, the danger was gone. Barely a day later, new data and new calculations showed that the asteroid, dubbed 1997 XF11, presented no threat at all. It would miss Earth by 1 million Km - closer than any previously observed asteroid of that size but a comfortable distance. Still, the incident focused attention once and for all on the largely ignored danger that asteroids and comets pose to life on Earth.

XF11 was discovered last Dec 6 by astronomer Jim Scotti, a member of the University of Arizona's Spacewatch group, which scans the skies for undiscovered comets and asteroids. Using a 77-year-old telescope equipped with an electronic camera, he had recorded three sets of images. The digitized images, fed into a computer programmed to look for objects moving against the background of fixed stars, revealed an asteroid that Scotti, in an e-mail to Marsden, described as standing out "like a sore thumb."

41. The world had reasons to worry because.....
- (a) it could come to an end
(b) it would be hit by an asteroid
(c) it might be hit by an asteroid
(d) the astronomers had predicted a definite collision
42. The news that soon came as a relief was that.....
- (a) there was no asteroid
(b) the asteroid would disintegrate in space
(c) it would cross the earth at a safe distance
(d) it would be too small to cause harm

43. The asteroid XF11 was discovered when.....
- (a) Jim Scotti observed the sky
 - (b) Scotti saw it through a telescope
 - (c) Marsden discovered it through the computer
 - (d) Jack Hills observed the sky
44. The astronomer, described the asteroid as standing out "like a sore thumb" because.....
- (a) it was not a pleasant sight
 - (b) it was noticeable in an unpleasant way
 - (c) it was threatening and ugly
 - (d) it had become huge as it neared the earth
45. The word in the second paragraph that means disaster is.....
- (a) collision
 - (b) dubbed
 - (c) catastrophe
 - (d) danger

Choose the most appropriate option from the ones given below to complete the following passage. Write the answers in your answer sheet against the correct blank number. Do not copy the whole passage.

Since the beginning of human existence, people (46) _____ over the world have expressed their emotions and ideas (47) _____ the medium of dance. The word 'folk' means people. Folk dances express the moods and feelings of (48) _____ common people. Different regions (49) _____ India have their own dances. (50) _____ dance is accompanied by music and songs of the region to which it belongs.

- 46. (a) (i) all (ii) whole (iii) much (iv) more
- 47. (b) (i) in (ii) into (iii) through (iv) of
- 48. (c) (i) the (ii) a (iii) an (iv) some
- 49. (d) (i) at (ii) of (iii) for (iv) from
- 50. (e) (i) Each (ii) All (iii) Whole (iv) Many
