

Section : 1 – Mathematics

1. If $\frac{3^{5x} \times (81)^2 \times 6561}{3^{2x}} = 3^7$, then $x =$ _____.
 (a) 3 (b) -3 (c) $\frac{1}{3}$ (d) $-\frac{1}{3}$

2. The HCF of the polynomial $12a^3b^4c^2$, $18a^4b^3c^3$ and $24a^6b^2c^4$ is _____.
 (a) $12a^3b^4c^2$ (b) $6a^6b^4c^4$ (c) $6a^3b^2c^2$ (d) $48a^6b^4c^4$

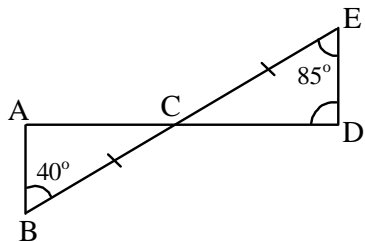
3. Find the value of a , if $(x + 2)$ is a factor of the polynomial $f(x) = x^3 + 13x^2 + ax + 20$
 (a) -15 (b) 20 (c) 25 (d) 32

4. A test has 60 questions. For each correct answer 2 marks are awarded and each wrong answer 1 mark is deducted. A candidate attempted all the questions in the test and scored 90 marks. Find the number of questions he attempted correctly.
 (a) 54 (b) 48 (c) 49 (d) 50

5. In a class, 70 students wrote two tests viz., test-I and test-II. 50% of the students failed in test-I and 40% of the students failed in test-II. How many students passed in both the tests?
 (a) 21 (b) 7 (c) 28 (d) 14

6. If the mean of $x + 2$, $2x + 3$, $3x + 4$ and $4x + 5$ is $x + 2$, then find the value of x .
 (a) 0 (b) 1 (c) -1 (d) 2

7. In the shown figure AD and BE intersect at C such that $BC = CE$. $\angle ABC = 40^\circ$ and $\angle DEC = 85^\circ$. Find $\angle BAC - \angle CDE$.



- (a) 45° (b) 125° (c) 55° (d) 110°

ROUGH SPACE

8. If $P(x) = x^5 + x^7 + x^4$ find degree of the given polynomial.
 (a) 5 (b) 7 (c) 4 (d) 3
9. The difference between S.I. and C.I. on a sum of Rs. 40000 for two years in Rs.900. What is the annual rate of interest ?
 (a) 20% (b) 10% (c) 12% (d) 15%
10. If $a : b = 5 : 4$ and $b : c = 16 : 25$, then find $a : b : c$
 (a) 20 : 25 : 16 (b) 25 : 20 : 16 (c) 25 : 16 : 20 (d) 20 : 16 : 25

Section : 2 – Science

11. What is the name of short duration wave?
 (a) Pulse (b) Frequency (c) Time period (d) Velocity
12. Which of the following liquids conduct electricity?
 (a) Honey (b) Distilled water (c) Vinegar (d) Milk
13. The amount of ground displacement in an earthquake is called
 (a) Focus (b) Slip (c) Dip (d) none of these
14. A force
 (a) can change the state or rest or motion (b) can change the shape of object
 (c) can change speed of a body (d) all of these
15. A body immersed in a fluid experiences an upward thrust which depends on
 (a) The weight of the fluid displaced by it (b) The volume of the body
 (c) The mass of the body (d) All of these
16. A concave mirror forms a virtual and enlarged image of an object if the object is placed at/between
 (a) C (b) F (c) F and C (d) F and P
17. A body floats in vertical position, when its centre of buoyancy is
 (a) Below centre of gravity of the body (b) above the centre of gravity of the body
 (c) At some place where centre of gravity lies (d) none of these

ROUGH SPACE

18. Statement 1: As a balloon rises in the air its volume increases, at the end it acquires a stable height and cannot rise any further.
Statement 2: Air pressure increases with altitude
(a) Both Statement 1 and Statement 2 are true and Statement 2 is correct explanation of statement 1
(b) Both statement 1 and statement 2 are true but statement 2 is not correct explanation of statement 1
(c) Statement 1 is true and statement 2 is false
(d) Statement 1 is false and statement 2 is true
19. According to the sign convention, the distance of image
(a) is always positive (b) is always negative
(c) may be positive or negative (d) equal to its height
20. _____ was launched in the honour of Kalpana Chawla, a space scientist of Indian origin, who died in mishap in a space vehicle
(a) INSAT-3E (b) INSAT-3D (c) INSAT-1A (d) INSAT-IID
21. Fibre obtained by chemical treatment of wood pulp is called _____.
(a) Natural Silk (b) Rayon (c) Nylon (d) Polyester
22. _____ is used commonly for making parachute
(a) Polythene (b) Polyester (c) Nylon (d) Silk
23. All materials shown property of malleability expect
(a) Iron (b) Graphite (c) Aluminium (d) Silver
24. Which oxide of a metal gets reduced only by coke and not by H_2 gas and CO gas?
(a) Fe_2O_3 (b) PbO (c) ZnO (d) CuO
25. Name the compound present in head of match stick
(a) Antimony disulphide (b) Potassium Chlorate and Antimony trisulphide
(c) White phosphorous and potassium chlorate (d) Red phosphorous and potassium chlorate
26. Inflammable substances have _____.
(a) High ignition temperature (b) Low ignition temperature
(c) No ignition temperature (d) High boiling point

ROUGH SPACE

27. Which of the following is obtained from coal tar?
(a) Petrol (b) Coke (c) Air (d) Naphthalene balls
28. Carbonisation is
(a) Slow conversion of dead vegetation into coal
(b) Deposition of soil
(c) Falling of trees
(d) None of these
29. Zone of partial combustion is
(a) luminous zone (b) Innermost zone (c) dark zone (d) non-luminous zone
30. Petrochemicals are used in the manufacture of
(a) Polythene (b) Detergents (c) Fibres (d) All of these
31. The protein synthesizing organelle inside a cell is _____ .
(a) Mitochondria (b) Golgi apparatus (c) Ribosome (d) Lysosome
32. Polio causing organism is a _____ .
(a) Bacteria (b) Virus (c) Fungi (d) Protozoan
33. The blood vessel which provides deoxygenated blood from heart to lungs is _____ .
(a) Vena Cava (b) Pulmonary Artery (c) Pulmonary Vein (d) Aorta
34. The hormones LH & FSH released from the pituitary gland act on the _____ .
(a) Testes and ovaries (b) Kidneys (c) Urinary bladder (d) Thyroid gland
35. One neuron is connected to another through junctions known as _____ .
(a) Neuro muscular junction (b) Synapse
(c) Synapsis (d) Synaptonemal complex
36. In the human female reproductive cycle, ovulation occurs _____ .
(a) at the beginning of menstrual cycle (b) on the 14th day of menstrual cycle
(c) at the end of menstrual cycle (d) randomly on any day of menstrual cycle

ROUGH SPACE

37. The correct sequence of pathways in reflex arc is
- (a) effector muscle → motor neuron → sensory neuron → CNS → sense organ
 - (b) CNS → sensory neuron → sense organ → effector organ → motor neuron
 - (c) sense organ → sensory neuron → CNS → motor neuron → effector muscle
 - (d) sensory neuron → sense organ → CNS → effector muscle → motor neuron

38. Match the column I with endocrine glands with their hormones secreted in column II

	I		II
1.	Pituitary gland	A.	Cortisol
2.	Pancreas	B.	TSH
3.	Adrenal glands	C.	Insulin
		D.	Thyroxine

- (a) 1-B 2-C 3-A
 - (b) 1-A 2-C 3-B
 - (c) 1-D 2-A 3-C
 - (d) 1-C 2-A 3-D
39. State whether following statements are True (T) or False (F)
- 1. Freezing and dehydration are two methods of food preservation.
 - 2. Viruses can reproduce outside a cell.
- (a) 1-T 2-T (b) 1-T 2-F (c) 1-F 2-T (d) 1-F 2-F
40. Prokaryotic cells lack _____ .
- (a) cell wall (b) cell membrane (c) ribosomes (d) mitochondria

ROUGH SPACE
