

ENGLISH

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9. ***To hit below the belt* means:**

- a) to use unfair means
- b) to criticize somebody
- c) to attack suddenly
- d) to find a weak spot

10. **The passive of “She loves people taking her photograph.” is:**

- a) People are loved taking her photograph.
- b) She loves to be photographed.
- c) She loves people to take her photograph.
- d) She loves having her photograph taken.

PHYSICS

11. **“Light year” is the unit of**

- a) Distance
- b) Velocity
- c) Time
- d) Momentum

12. **A ball is dropped from the height of 72m. What will be its acceleration when it reaches the height of 36m?**

- a) 0 ms^{-2}
- b) 4.9 ms^{-2}
- c) 9.8 ms^{-2}
- d) Insufficient information

13. **Kinetic energy of a body of mass m is E . Its Linear momentum will be equal to**

- a) $2mE$
- b) $(2mE)^{1/2}$
- c) $(2mE)^{-1/2}$
- d) $(2mE)^2$

14. **Gravitational force produced between two bodies is 4N when they are at the distance of 2 m. How much gravitational force is produced when they are kept 4 m apart?**

- a) 0.5 N
- b) 1 N
- c) 2 N
- d) 4 N

15. **One atmospheric pressure is equal to**

- a) $1.01 \times 10^{-5} \text{ Nm}^{-2}$
- b) $1.01 \times 10^5 \text{ Nm}^2$
- c) $1.01 \times 10^5 \text{ Nm}^{-2}$
- d) 1 Nm^{-2}

16. **A transformer cannot change the magnitude of**

- a) Current
- b) Voltage
- c) Power
- d) None of the above

GLOBAL
SCHOOL
OF SCIENCE

- # CHEMISTRY

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26. BHC is:

- | | |
|----------------------------|---------------------------|
| a) Chlorinated insecticide | b) Phosphatic insecticide |
| c) Inorganic insecticide | d) Carbonated insecticide |

27. German silver is the alloy of:

- | | |
|-----------------|-----------------|
| a) Ag + Cu | b) Au + Zn |
| c) Cu + Zn + Ni | d) Au + Cu + Ni |

28. Which of the following is least reactive

- | | |
|-------------|------------|
| a) Fluorine | b) Bromine |
| c) Chlorine | d) Iodine |

29. IUPAC name of Acetylene is

- | | |
|-----------|------------|
| a) Ethene | b) Ethyne |
| c) Ethane | d) Propane |

30. During electrolysis of water, oxygen is liberated at;

- | | |
|--------------|----------|
| a) Cathode | b) Anode |
| c) Voltmeter | d) None |

MATHEMATICS

31. Which of the following is a measure of dispersion?

- | | |
|---------|-----------|
| a) Mean | b) Median |
| c) Mode | d) Range |

32. If x is the length of median of an equilateral triangle, then its area is

- | | |
|---------------------------|--------------------|
| a) x^2 | b) $\frac{x^2}{2}$ |
| c) $\frac{x^2}{\sqrt{3}}$ | d) $\frac{x^2}{3}$ |

33. Equation of a tangent to the circle $x^2 + y^2 = 9$ and parallel to a line $2x + y - 3 = 0$ is

- | | |
|-------------------------------|------------------------------|
| a) $2x + y + 3 = 0$ | b) $2x - y + 3\sqrt{5} = 0$ |
| c) $2x + y \pm 3\sqrt{5} = 0$ | d) $x + y \pm 5\sqrt{3} = 0$ |

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BIOLOGY

41. ----- is also called amphibious plants.
- a) Angiosperms
 - b) pteridophytes
 - c) bryophytes
 - d) mycota
42. Which cell organelles are called protein factory of a cell?
- a) Mitochondria
 - b) ribosome
 - c) golgi bodies
 - d) nucleus
43. Identity the plant which has tap root and reticulate venation-
- a) Maize
 - b) bamboo
 - c) soyabean
 - d) all
44. Who is the father of genetics?
- a) Mendel
 - b) N. green
 - c) Darwin
 - d) Louis Pasteur
45. Which of the following is major effect of air pollution?
- a) Blooming of aquatic plant
 - b) Global warming
 - c) Death of fishes
 - d) change in soil texture.
46. Goitre is caused by the abnormal functioning of
- a. Pancreas
 - b. Adrenals
 - c. Pituitary
 - d. Thyroid
47. Which condition can be treated with antibiotics?
- a. AIDS
 - b. Constipation
 - c. Diabetes mellitus
 - d. Syphilis
48. Hardest substance of the body is
- a. Cartilage
 - b. Bone
 - c. Enamel
 - d. Skull
49. Most of the mammals are viviparous except
- a. Platypus and Echidna
 - b. Hedgehog
 - c. Kangaroo
 - d. None
50. Creeping vertebrates are
- a. Amphibians
 - b. Pisces
 - c. Fishes
 - d. Reptiles

SET – IV

1. c	2. a	3. d	4. d	5. a	6. c	7. b	8. c	9. a	10. d
11. a	12. c	13. b	14. b	15. c	16. c	17. d	18. d	19. a	20. a
21. b	22. a	23. c	24. b	25. c	26. a	27. c	28. d	29. b	30. b
31. d	32. c	33. c	34. b	35. c	36. a	37. c	38. a	39. c	40. b
41. c	42. b	43. c	44. a	45. b	46. d	47. d	48. c	49. a	50. d

|| PHYSICS ||

11. a) Light year = Unit of distance

$$1 \text{ light year} = 9.46 \times 10^{15} \text{ m}$$

$$\text{Par second} = 3.26 \text{ light year (unit of distance)}$$

$$1 \text{ Astronomical Unit} = 1.5 \times 10^{11} \text{ m.}$$

12. c) Varies with large altitude but remains constant for small variation in height.

13. b) Momentum $P = mv$ and

$$\text{Kinetic energy, } E = \frac{1}{2} mv^2 = \frac{1}{2m} (mv)^2 = \frac{P^2}{2m}$$

$$\therefore P = (2mE)^{1/2}$$

14. b) We know,

Case I

$$F = \frac{GM_1M_2}{d_1^2}$$

$$4 = \frac{GM_1M_2}{(2)^2}$$

$$4 \times 4 = GM_1M_2$$

$$GM_1M_2 = 16$$

Case II

$$F = \frac{GM_1M_2}{d_2^2}$$

$$F = \frac{16}{4^2} = \frac{16}{16} = 1 \text{ N}$$

15. c) $1 \text{ atm} = 760 \text{ mm of Hg} = 1.01 \times 10^5 \text{ Nm}^{-2} = 1.013 \text{ bar}$
16. c) Power (P) = I × V. It remains constant
17. d) Density of water is maximum at 4°C i.e. volume becomes minimum, so when water is heated from 0°C to 4°C, its volume decreases and above 4°C, its volume increases.
18. d) Convex mirror is used in vehicles for rear view.
19. a) Dynamo ⇒ Converts Mechanical energy to electrical energy
Transformer ⇒ High voltage to low or vice-versa.
Electrical Motor ⇒ Electrical energy to Mechanical energy.
Galvanometer ⇒ used to detect the current flow.
20. a) The sound waves of frequency *above 20 KHz*, i.e. above audible range are known as *ultrasound* and produced by bats and dolphin. While whales and earthquake produce infrasonic sound.

|| CHEMISTRY ||

21. b) Transition metal:
22. a) Acidic : CuSO_4 is the salt of strong acid H_2SO_4 and weak base $\text{Cu}(\text{OH})_2$ so in aqueous medium Cu^{++} can hydrolyze water to give excess H^+ ion .
23. c) $ns^2 np^5$: It is the electronic configuration of halogen and halogens are electronegative than other.
24. b) Atomic hydrogen : It is the most energetic form of hydrogen and more reactive than other hydrogen
25. c) Diethyl ether
26. a) Chlorinated insecticide
27. c) $\text{Cu} + \text{Zn} + \text{Ni}$: Germen silver

28. d) Iodine: In non-metal on going from top to bottom with in group of periodic table reactivity decreases
29. b) Ethyne
30. b) Anode : During electrolysis of water by using inert electrode. H_2O dissociates into H^+ and OH^- . H^+ is cation and migrate towards cathode where OH^- is anion and migrate to ward anode where it decomposes to give oxygen gas and water.

|| MATHEMATICS ||

31. d) mean, median and mode are measures of central tendency.
32. c) median = x , side length = k say. Median is perpendicular to side in equilateral triangle. By Pythagoras, $k^2 = x^2 + \frac{k^2}{4} \Rightarrow k = \frac{2}{\sqrt{3}} x$.

$$\text{Area of the triangle} = \frac{\sqrt{3}}{4} l^2 = \frac{x^2}{\sqrt{3}}$$

33. c) Center = (0, 0)

radius (r) = 3

Any line parallel to $2x + y - 3 = 0$ is $2x + y + k = 0$

: Radius = perpendicular distance from (0, 0) to $2x + y + k = 0$

$$3 = \pm \frac{2 \times 0 + 0 + k}{\sqrt{2^2 + 1^2}}$$

$$k = \pm 3\sqrt{5}$$

34. b) In the 9th day water will be half of the tank and in the 10th day, tank will be completely filled.

35. c) $\frac{\sqrt{3}}{2} \sin x - \frac{1}{2} \cos x = \frac{\sqrt{3}}{2}$

$$\sin \left(x - \frac{\pi}{6} \right) = \sin \frac{\pi}{3}$$

$$\therefore x = 90$$

36. a) Check the options.

37. c) area of square = 4

$$l^2 = 4$$

$$l = 2$$

Now, ΔSQR

$$(SQ)^2 = (SR)^2 + (RQ)^2$$

$$(SQ)^2 = 4 + 4$$

$$SQ = 2\sqrt{2}$$

$$\text{Radius} = \sqrt{2}$$

38. a) $\frac{40}{100} \times r = s$

$$4r = 10s$$

$$10\% \text{ or } r = \frac{10r}{100} = \frac{4r}{40} = \frac{10s}{40} = \frac{s}{4}$$

39. c) a, b, c are in continued proportion

$$\frac{a}{b} = \frac{b}{c}$$

$$ac = b^2$$

40. b)

No. of students	No. of days
a	b-c
a-d	?

No. of students and no. of days are inversely proportional

$$\frac{?}{b-c} = \frac{a}{a-d} \Rightarrow ? = \frac{a(b-c)}{a-d}$$

|| BIOLOGY ||

- 41. c) • Bryophytes need water for the fertilization so called amphibious plants.
- 42. b) • **Mitochondria** - Power house of cell.
 - **Lysosomes** - Suicidal bag of cell.
 - **Ribosomes** - Protein factory of cell.
- 43. c) • Monocot has parallel venation, fibrous root system and single cotyledon.
- 44. a) • N. green- Father of plant histology
 - Darwin- Father of natural selection
 - Louis Pasteur- Father of microbiology
- 45. b) • Blooming of aquatic plants and death of fishes - result of water pollution
 - Change in soil texture- due to soil pollution.
- 46. d) • A swelling of the neck resulting from enlargement of the thyroid gland is called goiter.
- 47. d) • Syphilis is a bacterial infection usually spread by sexual contact.
- 48. c) • Tooth enamel is the hardest substance in the human body.
- 49. a) • Platypus and Echidna are the only living mammals that lay eggs and the only surviving members of the order Monotremata.
- 50. d) • Amphibians swims in water and leap on land.
 - Fishes and Pisces swims in water.

