SET - IV

ENGLISH

$\mathbf{A} \mathbf{s}$	peech made at the beginn	ing of the	e play is:
a)	epilogue	b)	monologue
c)	prologue	d)	dialogue
ΑŢ	erson who acts against re	ligion is _	•
a)	heretic	b)	atheist
c)	secular	d)	sadist
	are having	a discus	sion.
a)	I, your sister, and you	b)	You, I, and your sister
c)	Your sister, I, and you	d)	You, your sister, and I
He	has climbed	Mt. Ev	verest.
a)	a	b)	an
c)	the	d)	none
	entered the o	office wh	en she realized that she had
for	gotten her purse at home.		
a)	Hardly had she	b)	Hardly she had
c)	Hardly she has	d)	Hardly she
I'm	$_{ m I}$ stuck in a fog. I wish I $_{ m I}$	0	on a trek alone.
a)	wasn't	b)	weren't
c)	hadn't been	d)	should have been
It's	s essential that every c	hild	the same educational
opp	portunities.		
a)	has	b)	have
c)	should have	d)	had
Sho	e talked about the compet	ition as if	she a part in it.
a)	took	b)	has taken
c)	had taken	d)	was taken



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 photograph	ied.					
	c) She loves people to take he	r photogr	aph.				
	d) She loves having her photo	graph tak	en.				
	DEN	YSICS					
	<u> </u>	10100					
11.	"Light year" is the unit of						
	a) Distance	b)	Velocity				
	c) Time	d)	Momentum				
12.	A ball is dropped from the	e height	of 72m. What will be its				
	acceleration when it reaches t	he height	t 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 ma	ass m is I	E. Its Linear momentum will				
	be equal to						
	a) 2mE	,	$(2mE)^{1/2}$				
	c) (2mE) ^{-1/2}	<i>'</i>	$(2mE)^2$				
14.	Gravitational force produced		•				
	are at the distance of 2 m. How when they are kept 4 m apart		ravitational force is produced				
	a) 0.5 N		1 N				
	c) 2 N	,	4 N				
15.	One atmospheric pressure is e	,					
10.	a) $1.01 \times 10^{-5} \mathrm{Nm}^{-2}$		$1.01 \times 10^5 \mathrm{Nm}^2$				
	c) $1.01 \times 10^5 \text{Nm}^{-2}$	d)	1 Nm ⁻²				
16.	A transformer cannot change	,					
	a) Current	b)					
	c) Power	d)					
	,	/					

17.	W	When water is heated from 0°C to 20°C, then its volume?						
	a)	Remains same	b)	Increases				
	c)	Decreases	d)	First decreases then increases				
18.	18. Which of the following statements is incorrect for plane n							
	a)	Object size is equal to image size	e.					
	b)	Image is erect, virtual and latera	lly i	nverted.				
		Magnification is 1.						
		Used in vehicles for rear view.						
19.	W	hich device converts mechanica						
	a)	Dynamo		Electrical motor				
	c)	Transformer	d)	Galvanometer				
20.	Uli	tra sound is produced by						
	a)	Bats	b)					
	c)	Earthquake	d)	All				
		CHEMIS		RY				
21.	d-l	olock elements are also known a	ıs:					
	a)	Inner transition element	b)	Transition element				
	c)		d)	both (a) and (b)				
22.		SO ₄ solution is	/	(4)				
	a)	Acidic	b)	Basic				
	c)	Neutral	d)	Alkaline				
23.	W	hich of the following is the most	elec	ctronegative?				
	a)	$ns^2 np^3$	b)	ns^2np^4				
	c)	ns ² np ⁵	d)	ns^2np^4				
24.	W	hich hydrogen is highly reactive	?					
	a)	Nascent hydrogen	b)	Atomic hydrogen				
	c)	Molecular hydrogen	d)	Para hydrogen				
25.	W	hich of the following compound	is u					
	a)	Methyl alcohol	b)	Ethyl alcohol				
	c)	Diethyl ether	d)	Trihydric alcohol				
		•		-				

26. BHC is:

- a) Chlorinated insecticide
- b) Phoaphatic 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) $x + y \pm 5\sqrt{3} = 0$

- 34. The quantity of water in a cylindrical tank doubles in everyday. In the eight day from the beginning, it was found that one fourth of the tank was filled. How many days will it take to fill the tank from the beginning?
 - a) 2

b) 10

c) 16

- d) 32
- 35. If $\sqrt{3} \sin x \cos x = \sqrt{3}$ for $0^{\circ} \le x \le 180^{\circ}$, than the value of x is
 - a) 30°

b) 20°

c) 90°

- d) 10°
- 36. Solve for x, if $\sqrt{x-4} = 9 \sqrt{x+5}$
 - a) 20

b) 25

c) 9

- d) 16
- 37. In the figure, square PQRS is inscribed in a circle. If area of square PQRS is 4, what is the radius of a circle?



a) 2

b) $2\sqrt{2}$

c) $\sqrt{2}$

- d) $4\sqrt{2}$
- 38. If 40% of r is equal to S, which of the following is equal to 10% of r?
 - a) $\frac{S}{4}$

b) 4S

c) $\frac{4}{5}$

- d) $\frac{S}{5}$
- 39. If a, b, c are in continued proportion, then
 - a) b is AM between a and c
- b) a is GM b and c
- c) b is GM between a and c
- d) c is the greatest number
- 40. 'a' students have food enough for 'b' days. After 'c' days, 'd' students left the group, for how many days will the remaining food last for?
 - a) $\frac{a-d}{a(b-c)}$

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

c) $\frac{ab}{a-d}$

d) *a*



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.	Ide	entity the plant which has tap ro	ot aı	nd reticulate venation-			
	a)	Maize	b)	bamboo			
	c)	soyabean	d)	all			
44.	W	ho is the father of genetics?					
	a)	Mendel	b)	N. green			
	c)	Darwin	d)	Louis Pasteur			
45.	W	hich of the following is major eff	ect o	of air pollution?			
	a)	Blooming of aquatic plant	b)	Global warming			
	c)	Death of fishes	d)	change in soil texture.			
46.	_						
	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.	Cr	eeping 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. с	16. c	17. d	18. d	19. a	20. a
21. b	22. a	23. с	24. b	25. с	26. a	27. с	28. d	29. b	30. b
31. d	32. c	33. с	34. b	35. с	36. a	37. с	38. a	39. с	40. b
41. c	42. b	43. с	44. a	45. b	46. d	47. d	48. c	49. a	50. d

|| PHYSICS ||

- 11. a) Light year = Unit of distance
 - 1 light year = 9.46×10^{15} m

Par second = 3.26 light year (unit of distance)

- 1 Astronomical Unit = 1.5×10^{11} m.
- 12. c) Varies with large altitude but remains constant for small variation in height.
- 13. b) Momentum P = mv and

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

:.
$$P = (2mE)^{1/2}$$

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) = $I \times V$. 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 $Cu(OH)_2$ so in aqueous medium Cu^{++} can hydrolyze water to give excess H^+ ion .
- 23. c) ns² np⁵: 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) Cu + Zn + 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. H₂O 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, $k^2 = x^2 + \frac{k^2}{4} \implies k = \frac{2}{\sqrt{3}}x$.

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

$$1^2 = 4$$

$$1 = 2$$

Now, Δ SQR

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

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

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

Radius = $\sqrt{2}$

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

$$4r = 10s$$

10% 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.

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