NEET QUESTION PAPER (2018) BOOKLET CODE - ALHCA (ZZ)

- A tuning fork is used to produce resonance in a glass tube. The length of the air column in this tube can be adjusted by a variable piston. At room temperature of 27°C two successive resonances are produced at 20 cm and 73 cm of column length. If the frequency of the tuning fork is 320 Hz, the velocity of sound in air at 27°C is
 - (1) 330 m/s
 - (2) 339 m/s
 - (3) 300 m/s
 - (4) 350 m/s
- 2. An electron falls from rest through a vertical distance h in a uniform and vertically upward directed electric field E. The direction of electric field is now reversed, keeping its magnitude the same. A proton is allowed to fall from rest in it ihrough the same vertical distance h. The time of fall of the electron, in comparison to the time of fall of the proton is
 - (1) smaller
 - (2) 5 times greater
 - (3) equal
 - (4) 10 times greater

A pendulum is hung from the roof of a sufficiently high building and is moving freely to and fro like a simple harmonic oscillator. The acceleration of the bob of the pendulum is 20 m/s^2 at a distance of 5 m from the mean position. The time period of oscillation is

- (1) 2*n* s
- (2) πs
- (3) 1s
- (4) 2s
- 4. The electrostatic force between the metal plates

Current sensitivity of a moving coil galvanometer is 5 div/mA and its voltage sensitivity (angular deflection per unit voltage applied) is 20 div/V. The resistance of the galvanometer is

- 40 Ω
- (2) 25 Ω
- (3) 500 Ω
- (4) 250 Ω

6.

- A thin diamagnetic rod is placed vertically between the poles of an electromagnet. When the current in the electromagnet is switched on, then the <u>diamagnetic</u> rod is pushed up, out of the horizontal magnetic field. Hence the rod gains gravitational potential energy. The work required to do this comes from
 - (1) the current source
 - (2) the magnetic field
 - (3) the induced electric field due to the changing magnetic field
 - (4) the lattice structure of the material of the rod

An inductor 20 mH, a capacitor 100 μ F and a resistor 50 Ω are connected in series across a source of emf, V = 10 sin 314 t. The power loss in the circuit is

- (1) 0.79 W
- (2) 0·43 W
- (3) 1·13 W
- (4) 2·74 W

(1)

(2)

(3)

(4)

7.14 A

5.98 A

11.32 A

14.76 A

0020 M

8. A metallic rod of mass per unit length 0.5 kg m⁻¹ is lying horizontally on a smooth inclined plane which makes an angle of 30° with the horizontal. The rod is not allowed to slide down by flowing a current through it when a magnetic field of induction 0.25 T is acting on it in the vertical direction. The current flowing in the rod to keep it stationary is

of an isolated parallel plate capacitor C having a charge Q and area A, is

- (1) independent of the distance between the plates.
- (2) linearly proportional to the distance between the plates.
- (3) inversely proportional to the distance between the plates.
- (4) proportional to the square root of the distance between the plates.

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SPACE FOR ROUGH WORK

English

- g. A carbon resister of $(47 \pm 4.7) k\Omega$ is to be marked 12. with rings of different colours for its identification. The colour code sequence will be
 - (1) Violet Yellow Orange Silver
 - (2) Yellow Violet Orange Silver
 - (3) Green Orange Violet Gold
 - (4) Yellow Green Violet Gold
- 10. A set of 'n' equal resistors, of value 'R' each, are connected in series to a battery of emf 'E' and internal resistance 'R'. The current drawn is I. Now, the 'n' resistors are connected in parallel to the same battery Then the current drawn from battery becomes 10 I. The value of 'n' is
 - (1) 10
 - (2) 11
 - (3) 9
 - (4) 20
- 11. A battery consists of a variable number 'n' of identical cells (having internal resistance 'r' each) which are connected in series. The terminals of the battery are short circuited and the current I is measured. Which of the graphs shows the correct relationship between I and n?





- In Young's double slit experiment the separation d between the slits is 2 mm, the wavelength λ of the light used is 5896 Å and distance D between the screen and slits is 100 cm. It is found that the angular width of the fringes is 0.20°. To increase the fringe angular width to 0.21° (with same λ and D) the separation between the slits needs to be changed to
 - (1) 1.8 mm
 - (2) 19mm
 - (3) **1**·7 mm
 - $(4) \quad 2.1 \text{ mm}$
- 13. An astronomical refracting telescope will have large angular magnification and high angular resolution, when it has an objective lens of
 - (1) small focal length and large diameter
 - (2) large focal length and small diameter
 - (3) small focal length and small diameter
 - (4) large focal length and large diameter
- 14. Unpolarised light is incident from air on a plane surface of a material of refractive index 'µ'. At a particular angle of incidence 'i', it is found that the reflected and refracted rays are perpendicular to each other. Which of the following options is correct for this situation ?







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(3)

(1) Reflected light is polarised with its electric vector parallel to the plane of incidence

(2) Reflected light is polarised with its electric vector perpendicular to the plane of incidence

(3)
$$i = \tan^{-1}\left(\frac{1}{\mu}\right)$$

(4) $i = \sin^{-1}\left(\frac{1}{\mu}\right)$

English



fe 18 her of r the

in the combination of the following gates the 26. 2g. output Y can be written in terms of inputs A and Bas



- A.B (1)
- $A \cdot \overline{B} + \overline{A} \cdot B$ (2)
- A+B (3)
- A.B + A.B(4)

In the circuit shown in the figure, the input 24 voltage V_i is 20 V, $V_{BE} = 0$ and $V_{CE} = 0$. The values of IB, IC and B are given by 20 V



A solid sphere is rotating freely about its symmetry axis in free space. The redius of the sphere is increased keeping its mass same. Which of the following physical quantities would remain constant for the sphere ?

Angular velocity (1)

27.

- Moment of inertia (2)
- Angular momentum (3)
- Rotational kinetic energy (4)

The kinetic energies of a planet in an elliptical orbit about the Sun, at positions A, B and C are K_A , K_B and K_C , respectively. AC is the major axis and SB is perpendicular to AC at the position of the Sun S as shown in the figure.



- KA < KB < KC (1)
- (2) $K_A > K_B > K_C$
- $K_B > K_A > K_C$ (3)
- $K_B < K_A < K_C$ (4)

If the mass of the Sun were ten times smaller and the universal gravitational constant were 28. ten times larger in magnitude, which of the following is not correct ?

- Raindrops will fall faster. (1)
- Walking on the ground would become more (2)difficult.
- 'g' on the Earth will not change. $(\mathbf{3})$
- Time period of a simple pendulum on the (4) Earth would decrease.

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is tal ted ent IU ate

ish

(4) $I_B = 20 \ \mu A$, $I_C = 5 \ m A$, $\beta = 250$ 29. In a p-n junction diode, change in temperature 25. due to beating affects only reverse resistance (1)affects only forward resistance affects the overall V - I characteristics of **{2}** (3)**B-n** Junction does not affect resistance of p-n junction SPACE FOR ROUGH WORK (4)

A solid sphere is in rolling motion. In rolling motion a body possesses translational kinetic energy (Kt) as well as rotational kinetic energy (K_r) simultaneously. The ratio $K_t : (K_t + K_r)$ for the sphere is (1) 7:10 5:7 (2)2:5 (3)10:7 (4)

English

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A small sphere of radius 'r' falls from rest in a 34. viscous liquid. As a result, heat is produced due to viscous force. The rate of production of beat when the sphere attains its terminal velocity, is proportional to

- (1) r³
- (2) r
- (3) r^4
- (4) r⁵

31. A sample of 0.1 g of water at 100°C and normal pressure (1.013 × 10⁵ Nm⁻²) requires 54 cal of beat energy to convert to steam at 100°C. If the volume of the steam produced is 167.1 cc, the change in internal energy of the sample, is

- (1) 104·3 J
- (2) 208.7 J
- (3) 84·5 J
- (4) 42·2 J

32. Two wires are made of the same material and have the same volume. The first wire has cross-sectional area A and the second wire has cross.sectional area 3A. If the length of the first wire is increased by Δl on applying a force F, how much force is needed to stretch the second wire by the same amount ?

- (1) 9F
- (2) 6F
- (3) F
- (4) 4 F

33. The power radiated by a black body is P and it radiates maximum energy at wavelength, λ_0 . If the temperature of the black body is now changed so that it radiates maximum energy at wavelength $\frac{3}{4}\lambda_0$, the power radiated by it becomes nP. The value of n is

At what temperature will the this speed of oxygen molecules become just sufficient for 31 escaping from the Earth's atmosphere?	a body frictionle the figu
(Given :	
Mass of oxygen molecule (m) = 276 × 10 kg	T
Boltzmann's constant $k_B = 1.38 \times 10^{-30} \text{ J K}^{-1}$	h
(1) 2.508×10^4 K	f
(2) $8.360 \times 10^4 \text{ K}$	9
(3) $1.254 \times 10^{4} \text{ K}$	(1)
(4) $5.016 \times 10^4 \text{ K}$	(2)]
The volume (V) of a monatomic gas varies with its temperature (T), as shown in the graph. The	(3)
ratio of work done by the gas, to the heat absorbed by it, when it undergoes a change from	(4)
state A to state B,15	20 Three
	circ
A REAL PROPERTY AND A REAL	the
B	JI W
A	Syl Tec
T	rel
2	(1
	(2
(2) $\frac{2}{2}$	G
3	(
$(3) \frac{2}{7}$	
(4) 1	40.

The fundamental frequency in an open organ pipe is equal to the third harmonic of a closed organ pipe. If the length of the closed organ pipe is 20 cm, the length of the open organ pipe is

41.

English

34 (1)(2) 3 81 (3)256 256 (4) 81

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(1) $13 \cdot 2 \text{ cm}$ (2) 8 cm(3) 16 cm(4) $12 \cdot 5 \text{ cm}$

20%

12.5%

6.25%

(2)

(3)

(4)

37. The efficiency of an ideal heat engine working between the freezing point and boiling point of water, is
 (1) 26.8%



⁻²⁶ kg K⁻¹)

2S with

h. The

ë heat e from A body initially at rest and sliding along a frictionless track from a height h (as shown in completes a vertical circle of diameter AB = D. The height h is equal to
(1) 3/2 D
(2) D
(3) 5/4
(4) 7/5 D

- 39. Three objects, A : (a solid sphere), B : (a thin circular disk) and C : (a circular ring), each have the same mass M and radius R. They all spin with the same angular speed ω about their own symmetry axes. The amounts of work (W) required to bring them to rest, would satisfy the relation
 - $(1) \quad W_C > W_B > W_A$
 - (2) $W_A > W_B > W_C$
 - $(3) \quad W_A > W_C > W_B$
 - $(4) \quad W_B > W_A > W_C$
- 40. Which one of the following statements is incorrect?
 - (1) Rolling friction is smaller than sliding friction.
 - (2) Limiting value of static friction is directly proportional to normal reaction.
 - (3) Coefficient of sliding friction has dimensions of length

A block of mass m is placed on a smooth inclined wedge ABC of inclination θ as shown in the figure. The wedge is given an acceleration 'a' towards the right. The relation between a and θ for the block to remain stationary on the wedge is



A toy car with charge 9 moves on a frictionless horizontal plane surface under the influence of a uniform electric field \vec{E} . Due to the force $q \vec{E}$, its velocity increases from 0 to 6 m/s in one second duration. At that instant the direction of the field is reversed. The car continues to move for two more seconds under the influence of this field. The average velocity and the average speed of the toy car between 0 to 3 seconds are respectively

- (1) 2 m/s, 4 m/s
- (2) 1 m/s. 3 m/s
- (3) 1.5 m/s, 3 m/s
- (4) 1 m/s, 3.5 m/s

44. The moment of the force, $\mathbf{F} = 4\hat{\mathbf{i}} + 5\hat{\mathbf{j}} - 6\hat{\mathbf{k}}$ at (2, 0, - 3), about the point (2, -2, -2), is given by

(1) $-8\hat{i} - 4\hat{j} - 7\hat{k}$ (2) $-4\hat{i} - \hat{j} - 8\hat{k}$ (3) $-7\hat{i} - 4\hat{j} - 8\hat{k}$

an ed

dimensions of let	

- (4) Frictional force opposes the relative motion.
- 41. A moving block having mass m, collides with another stationary block having mass 4m. The lighter block comes to rest after collision. When the initial velocity of the lighter block is v, then the value of coefficient of restitution (e) will be (1) 0.5
 - (2) 0.25
 - (3) 0.4

(4) 0.8

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 $(4) - 7\hat{i} - 8\hat{j} - 4\hat{k}$

A student measured the diameter of a small steel ball using a screw gauge of least count 0.001 cm. The main scale reading is 5 nun and zero of circular scale division coincides with 25 divisions above the reference level. If screw gauge has a zero error of -0.004 cm, the correct diameter of the ball is

English

(1) 0.521 cm(2) 0.525 cm(3) 0.529 cm(4) 0.053 cm

46. Th	e difference between spermiogenesis and	50.	0. Nature II and select the correct option given	(diver (1)
spi	ermiation is	1.0	below: Column II	((2)
(1)	In spermiogenesis spermatids are formed while in spermiation spermatozoa are formed.	,	a. Proliferative Phase i. Breakdown of endometrial lining		(3) (4)
(2)	In spermiogenesis spermatozoa are formed, while in spermiation spermatids are formed.		b. Secretory Phase ii. Follicular Phase c. Menstruation iii. Luteal Phase	8.	1)
(3)	In spermiogenesis spermatozoa are formed while in spermiation spermatozoa are released from sertoli cells into the cavity of		a b c (1) iii ii i (2) i iii ⁱⁱ		(2) (3) (4)
(4)	seminiferous tubules. In spermiogenesis spermatozoa from sertoli cells are released into the cavity of seminiferous tubules, while in spermiation spermatozoa are formed.	51.	 (3) iii i ii (4) ii iii i All of the following are part of an operon except (1) an operator 	57.	WE dis (1) (2) (3)
47. The from (1)	amnion of mammalian embryo is derived ectoderm and mesoderm		 (2) structural genes (3) a promoter (4) an enhancer 	58.	(4 Ti of (1
(2) (3) (4) <u>n</u>	endoderm and mesoderm ectoderm and endoderm nesoderm and trophoblast	52.	 A woman has an X-linked condition on one of her X chromosomes. This chromosome can be inherited by (1) Only daughters 	59	(2) (3) (4) (4)
18. The con (1) bl pr (2) in	ntraceptive 'SAHELI' locks estrogen receptors in the uterus, reventing eggs from getting implanted. creases the concentration of estrogen and	53.	 (2) Only sons (3) Both sons and daughters (4) Only grandchildren According to Hugo de Vries, the mechanism of 		c

- (3) is a post-coital contraceptive.
 (4) is an IUD.
- 49. Hormones secreted by the <u>placenta</u> to <u>maintain</u> pregnancy are
 - (1) hCG, hPL, progestogens, prolactin
 - (2) hCG, hPL, estrogens, relaxin, oxytecia
 - (3) bCG, progestogens, estrogens, glucocorticoids
- (4)
 hCG, hPL, progestogens, estrogens
 (3)
 U

 ALHCA/ZZ/Page 8
 (4)
 A

evolution is

Amer

60.

AL

Englist

- (1) Multiple step mutations
- (2) Saltation
- (3) Minor mutations
- (4) Phenotypic variations
- 54. AGGTATCGCAT is a sequence from the coding strand of a gene. What will be the corresponding sequence of the transcribed mRNA?
 (1) AGGUAUCGCAU
 (2) UGGTUTCGCAT
 (3) UCCAUAGCGUA
 (4) ACCUAUGCGAU

_		eluded in 'Ex-situ
		All of the following are included
	the following sets of examples for 61.	conservation' except
55.	Anone Aivergent evolution, select the incorrect option .	(1) Wildlife safari parks
	(1) Forelimbs of man, bat and cheetah	(2) Sacred groves
	(2) Heart of bat, man and cheetah	(3) Seed banks
	(3) Eye of octopus, bat and man	(4) Botanical gardens
	(4) Brain of bat, man and cheetah	Which part of poppy plant is used to occur
	Conversion of milk to curd improves its 62	drug "Smack"?
66.	nutritional value by increasing the amount of	(1) Flowers
	(1) Vitamin D	(2) Latex
	(2) Vitamin A	(3) Leaves
	(3) VitaminE	(4) Roots
	(4) Vitamin B ₁₂	nonulation of a country,
	This of the following is not an autoimmune f	53. In a growing populative individuals are more than
57.	Which of the following to the	(1) pre-reproductive individuals.
	(1) Psoriasis	individuals are less than the
	(1) Rheumatoid arthritis	(2) reproductive individuals.
	(2) Mitilizo	post-top- pro-roproductive individuals are less than
	(3) Alzhoimor's disease	(3) pre-repr the reproductive individuals.
	(4) Anzheimer of	(A) reproductive and pre-reproductive
58.	The similarity of bone structure of	individuals are equal in number.
	of many verteorates is en	of the following population
	(1) Homology	64. Which one of une in medical science for
	(2) Analogy	interactions is unders
	(3) Adaptive radiation	(1) Commensalism
	(4) Convergent evolution	(1) Commercial
59.	Which of the following croups' in humans?	(Z) Amongalism
	Inberitance of blood and r	(3) Americanism
	a. Dominance	(4) Farasitism
	b. Co-dominance	65. Match the items given in Column 1 with those in
	c. Multiple allele	Column II and select the correct option give
	d. Incomplete dominance	below ;
	e Polygenic inheritance	Column I Column II

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SPACE FOR ROUGH WORK

inflammation of

a, c and e (3) b, d and e (4) In which disease does mosquito transmitted 60. chronic cause pathogen lymphatic vessels ? Elephantiasis (1) Ascariasis (2) Amoebiasis (3) Ringworm disease (4)

b, c and e

a, b and c

(1)

(2)

UV-B radiation Eutrophication i. a. ii. Deforestation Sanitary landfill b. iii. Nutrient Snow blindness c. enrichment iv. Waste disposal Jhum cultivation d. . d С b a iv üi ü (1) 1 n iv üi i (2) iü iv ii (3) 1 ii i iv iii (4)

English

						antio 05 correctly	69.	Whic	th of the following is	; an	amino acid derived 73.	which	n of in ery
66	6. W	bich prese	of the	le (øl lung	lowin condi	itions in asthma and		h0rn (1)	Epinepbrine			(1)	Chie Muc
	(1	npriys } ln: res	flamma Dirator	tjon (v surfa	of br	onchioles: Decreased		(2)	Ecdysone			(3)	Par
	(2)) Ind	reased	numbe y surfa	er of	bronchioles; mereased		(3)	Estriol	0		(4)	Goł
	(3)) De Inf	creased	res tion of	pirat brone	ory surface; chioles		(4)	Estracion	4.77	74.	Ma Col	tch li
	(4)	lnc Inf	reased Lammat	resi tion of	pirato bronc	bjoles	70,	Wbi ince	ch of the following orrectly paired with	its	function?	be	low :
67.	Ma	atch th	ne items II and	s given select	in C the	correct option given		(1)	Medulla oblongata	•	controls respiration and cardiovascular	8.	C F
	bel a.	low: Col Tri	unin I cuspid v	alve	i.	Column II Between left atrium		(2)	Limbicsystem		reflexes. consists of fibre tracts that	р. С.	
	b.	Bic	uspid va	alve	ii.	Between right ventricle and pulmonary artery					different regions of brain; controls movement.	((1)
	C.	Sem	nilun ar	vajve	iii.	Between right atrium and right ventricle		(3)	Corpus callosum		band of fibers connecting left and right cerebral		(2) (3) (4)
		a	Ъ	С							hemispheres.	75	Whi
	(1)	ü	i	ii				(4)	Hypothalamus	-12	production of	10.	Tes
	(2)	1	iii	11			100				releasing hormones		(1)
	(3)	11	1	111			(here)				temperature,		(9)
	(4)	1	11								hunger and thirst.		\ Z Į
68.	Mate	h the	items ,	given	in Co	olumn I with those in							(3)
	belov	N :				TOTA OF TOTA PLACE	71.	Th	e transparent lens	in t	he human eye is held in		(4)
		Colur	nn I			Column II		its	Place by			76	C

- a. Tidal volume i. 2500 3000 mL
- b. Inspiratory Reserve ii. 1100 1200 mL volume
- c. Expiratory Reserve iii, 500 550 mL volume
- d. Residual volume iv. 1000 1100 mL 72.

iii

b d C a iii ü (1) iv 1 iii (2)ü iv î (3) iv iii ii ĩ

ü

iv

- ligaments attached to the ciliary body
 ligaments attached to the iris
 smooth muscles attached to the ciliary body
- (4) smooth muscles attached to the iris

Which of the following hormones can play a significant role in osteoporosis?

- (1) Aldosterone and Prolactin
- (2) Progesterone and Aldosterone
- (3) Parathyroid hormone and Prolactin
- (4) Estrogen and Parathyroid hormone

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a.

(4)

SPACE FOR ROUGH WORK

ALHO

English

C

1

13.	 Which of the following gastric cells indirectly which of the following gastric cells indirectly (1) Chief cells (2) Mucous cells Parietal cells 	 7. Select the <i>incorrect</i> match : (1) Lampbrush - Diplotene bivalents chromosomes (2) Allosomes - Sex chromosomes (3) Polytene chromosomes (4) Submet acentric - Leshaped chromososmes
	(3) Coblet cells	chromosomes
73.	(4) Goblet tens Match the items given in Column I with those in Column II and select the correct option given below: Column II	 78. Nissl bodies are mainly compared with the second sec
	a. Fibrin gen i. Osmotic balance b. Globulin ii. Blood dotting c. Albumin iii. Defence mechanism	 79. Which of these statements is <i>incorrect</i>? 79. Which of these statements is <i>incorrect</i>? (1) Enzymes of TCA cycle are present in mitochondrial matrix. (2) Glycolys is occurs in cytosol. (3) Glycolys is occurs in cytosol. (4) Physical distribution takes place in physical distribution.
	a b c (1) iii ii (2) i ii (3) ii iii (4) i iii	 (3) Oxidative phospheric phospheric (3) Oxidative phospheric (3) outer mitoch ondrial membrane. (4) Glycolysis operates as long as it is supplied (4) Glycolysis operates as long as it is supplied hydrogen atoms. with NAD that can pick up hydrogen atoms. 80. Which of the following events does not occur in rough endoplasmic reticulum ?
75.	 (4) 1 Which of the following is an occupation respiratory disorder? (1) Anthracis 	al (1) Protein folding (2) Protein glycosylation (3) Phospholipid synthesis (4) Cleavage of signal peptide
76.	 (2) Silicosis (3) Emphysema (4) Botulism Calcium is important in skeletal must 	 81. Many ribosomes may associate with a single mRNA to form multiple copies of a polypeptide mRNA to form multiple copies of ribosomes are simultaneously. Such strings of ribosomes are termed as (A) Polysome (B) Polyhedral bodies

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filament.

*

the myosin cross bridges and the actin filament. detaches the myosin head from the actin (4)

it. prevents the formation of bonds between (3)

binds to troponin to remove the masking of active sites on actin for myosin. (1) activates the myosin ATPase by binding to 82. (2)

Nucleosome (3) Plastidome Which of the following terms describe human dentition? Thecodont, Diphyodont, Homodont Thecodont, Dipbyodont, Heterodont (1) Pleurodont, Diphyodont, Heterodont (2) Pleurodont, Monophyodont, Honrodont (3) English (4)

83. Identify the vertebrate group of annals 89. characterized by crop and gizzard in its digestive aystem.

- Amphibia 11
- Reptilia 12)
- (3) Osteichthyes
- (4) Aves

a these animals is not 84. Which one •f homeotherm?

- Macropus (1)
- (2)Chelone
- (3) Psittacula
- (4) Camelus
- 85. Which of the following features is used to identify a male cockroach from a female cockroach?
 - Presence of a boat shaped sternum on the (1)9th abdominal segment
 - Presence of caudal styles (2)
 - Presence of anal cerci (3)
 - Forewings with darker tegnina (4)
- Which of the following organisms are known as 86 chief producers in the oceans?
 - (1)Dinoflagellates
 - (2) Diatoms
 - (3) Euglenoids
 - (4)Cyanobacteria

Ciliates differ from all other protozoans in 87.

- using flagella for locomotion (1)
- (2) having a contractile vacuole for removing

Match the items given in Column I with those Column II and select the correct option give below:

onvoluted tubule

UFic

ed

	Coli (Fu	umn I nution)			Column II (Part of Excretery System)
a.	Dita	afiltrat	ion	i	Henle's loop
Ъ.	Con of u	centrati rine	ioa	ü.	Ureter
С.	Tran uiin	asport o le	of	ili.	Urinary bladder
đ.	Stor	ageofu	urine	iν.	Malpighian corpuscle
				y.	Proximal convoluted tubu
	8	Ь	C	d	Section 2.
(1)	jv	v	ïi	jŝ	ii
~(2)	iv	i	ii	ii	ii
(3)	v	iv	ź	ii	ii

(4)

a.

b.

iv

(4) ii

SPACE FOR ROUGH WORK

Î.

iii

V

iv

Match the items given in Column I with those in 90. Column II and select the correct option given below :

ii

Column I	Column II
Glycosuria	i. Accumulation of
	acid in joints
Gout	ii. Mass of crystalli

-11	.)	It 1	UDC	tion	8 ;
(2	(3	Et (2013	tion	8
6	S)	It	is tł	ne fi	D.S
		rea	spir	atio.	n.
(4)	It	is a	นบด	:]£
7	Nhia	h	0 De	of	th
(2056	• IE	lati	ions	hi
1	non	e 01	the	e tw	0 1
	uie (
			iyai T	- 1//(()	
	(2)	1	ucc		
	(3)	Ŷ	1011	2	
	(4)	1	300	ana	
	Ox:	yge	eo is	s no	t
	(1)		Gre	eD s	su
	(2)		Nos	toc	
	(3)		Che	ITE	
	(4)	6	Сус	as	
	In	177	hick		·+1
4.	h		iant	c ?	L
	<i>i</i> 1	1	Ro		
	10	, n	Fe		
	12	4	L.C		US F.
	(2	5)	BO)th	IC
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95.	Σ)ou	ble	fer	til
	(1)	F	ū sia	מכ
			W	vith	ts
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			T	ucl	ei

what is the

respiration?

91.

92

9:

96.

(3)

(4)

97.

English

- excess water
- having two types of nuclei (3)
- using pseudopodia for capturing prey (4)
- Which of the following animals does not undergo 88. metamorphosis?
 - (1) Earthworm
 - (2)Tunicate
 - (3) Starfish
 - (4) Moth

ALHCA/ZZ/Page 12

salts within the kidney Renal calculi iii. Inflammation in C. glomeruli d. Glomerular iv. Presence of glucose in nephritis urine a b C d (1) iii ii iv (2)♠ ii iii iv (3)

iii

iv

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Which of t maintainin

Mag (1) (2)

Synga

Fusio

- Sodi (3)
- Calc (4) Pota
- Pollen gr liquid nit
- 12 (1)(2)- 80 (3) - 16
- (4) - 19
- ALHCA/ZZ/Pag

 Which arough the following of a work of a second second			a unit is not a prokaryote ?
 1) Supervised and the food electron acceptor for anarotic formation. (a) It is a nucleotide source for APP synthesis. (b) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a nucleotide source for APP synthesis. (c) It is a stude of a synthesis formation of two rules gametes with two polar nuclei. (c) Parsona (c) Parsona (c) Parsona of two onale gametes of a pollen to white of different eggs. (c) Paison of two onale gametes with two polar nuclei. (c) Syngany and triple fusion nuclei. (c) Paison of two onale gametes of a sponsible formation for source and structure. (c) It is a state for action of structure. (c) It is a state for action of structure. (c) It is a state for action of structure. (c) It is a state for active of source. (c) Kidney shaped (c) Stores is a sponsible forming turgor in cells? (c) Corec (c) Paise is an personal for a systema is responsible formation is transit and structure. (c) It is a state for active of source. (c) It is a state for structure. (c) It is a state for structure. (c) It is a state for structure. (d) Pais is a signale formation. (e) Pais a signale formation. (f) It is a state for active of boardies. (g) Diplohene. (h) Diplohene			8. Which among the following is the tollowing is
 a. in the functions as an ensyme. b. it is endedide source for ATP symbols. (a) It is a nucleation scrept of an anceroly mathematication in the functional groups the source for ATP symbols. (b) It is a nucleation scrept of an anceroly and induced and interpendence its line species of motion. A species of motion is a set as a calculated interpendence its line species of motion. A species of motion is a set as a calculated interpendence its line species of motion. A species of motion is a set as a calculated interpendence its line species of motion. A species of motion is a set as a species of motion. A species of motion is a set as a species of motion. A species of motion is a set as a species of motion. A species of motion is a set as a species of motion. A species of motion is a set as a species of motion. A species of motion is a set as a species of motion. A species of a species. A species of a species		what is the role of NAD ⁺ in cellular	(1) Saccharomyces
 11 Under due as an energene. 11 Under due as an energene. 12 Under due as an energene. 13 Under due as an energene. 14 Under due as an energene. 14 Under due as an energene. 15 Under due as an energene. 16 Under due as an energene. 17 Under due as an energene. 18 Under due as an energene. 19 Varies 10 Varies 10 Varies 10 Varies 10 Varies 10 Varies 11 Varies 11 Varies 12 Varies 13 Varies 14 Varies 14 Varies 15 Varies 16 Varies 17 Orene subplute bacterias 18 Varies 19 Orgene insord produced during photosynthesis by plans? 11 Ariff 11 Varies 12 Varies 13 Varies 14 Varies 15 Ordene diverse for any ender of bacterias 16 Varies 17 Varies of the following forms is iron absorbed by plans? 18 Schwich of the following forms is iron absorbed with two different eress 19 Varies of the following forms is iron absorbed with two different eress 10 Varies of the following forms is iron absorbed muchtics 10 Patison of two unale gametes with one ergs 11 Arigensium 12 Sodium 13 Songaug and triple fusion 14 Varies and the following forms is responsible for muchci 15 Strong of two unale gametes with one ergs 16 Which of the following ferments is responsible for muchci 10 Patison of two unale gametes with one ergs 11 Arise as the for active relations 12 Find Calgio of the phased 13 Earen abaped 14 Rectangular 15 Patison of two unale gametes with one ergs 14 Keetangular 15 Patison of two unale gametes with one ergs 16 Which of the following is temperature of the phased 17 Follong grains con be stored for several years in the based 18 Earen	91.	respiration?	(2) Mycobacterium
 11 thousdons as an electron entropy of the following plants acceptor for an anceptor of the following plants alows a very and of the following alows are deterned to the following forms is iron absorbed by plants? 1) <i>Hydrilla</i> 2) <i>Vaca</i> 3) <i>Vala</i> 4) <i>Creas</i> 4) <i>Creas</i> 4) <i>Creas</i> 4) <i>Creas</i> 5) <i>Cogen</i> is <i>not</i> produced during photosynthesis by a formation of the following forms is iron absorbed by plants? 1) <i>Ferric</i> 2) <i>Ferrows</i> 3) <i>Explains</i> 4) <i>Creas</i> 4) <i>Double fertilization is</i> (1) <i>Fasty acid breakdown</i> (2) <i>Ferrows</i> (3) <i>Explays</i> (4) <i>Frasion of two unde gametes of a pollen tow with two different effects</i> (3) <i>Explays</i> (4) <i>Prasion of two unde gametes</i> with one egg (5) <i>Wala</i> (6) <i>Wala</i> (7) <i>Pollen grains</i> can be stored for several years in bindio dirage having a temperature of (1) <i>Larger</i> (2) <i>Explays</i> (3) <i>Explays</i> (4) <i>Polassium</i> (5) <i>Solaus</i> (6) <i>Chars</i> (7) <i>Larger</i> (8) <i>Solaus</i> (9) <i>Creas</i> (9) <i>Caluins</i> (1) <i>Larger</i> (2) <i>Explays</i> (3) <i>Explays</i> (4) <i>Polassium</i> (5) <i>Solaus</i> (6) <i>Lager</i> (7) <i>Lager</i> (7) <i>Lager</i> (8) <i>Explays</i> (9) <i>Caluins</i> (9) <i>Creas</i> (9) <i>Creas</i><!--</td--><td></td><td>(1) It functions as an enzyme.</td><td>(3) Oscillatoria</td>		(1) It functions as an enzyme.	(3) Oscillatoria
 9. It is a midleditie source for ATP synthesis. 90. The two tractional to -1 segme are - segme a		(2) It functions as an electron carrier-	(4) Nostoc vienal groups characteristic of
 (a) It is a nucleotide source for ATP synthesis. (b) Wards of the following plants shows a vary due of the two can complete its like cycle within the other is a species of motive variance of the two can complete its like cycle within the other is a species of motive variance of the following is not a product of light cathody and hydroxyl (a) cathody (a) cathody (a) cathody (a) cathody (a) cathody (a)		(9) It is the final electron acceptor for acceptor (9)	99. The two functional of
 (1) This is not dree following plants shows a very as reaching of the following is more a product of high reactions the with a species of north, where the two can couplete its life cycle within the other? (1) Hydraylla (2) cores (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)		the in a nucleotide source for ATP synthesis.	sugars are
 22. which one of this following process from its where noise of the two can complete its line cycle without the other? 23. Wate (1) Mydrilla (2) Yucca (3) Wate (3) W		(4) It is a microstillo source it	(1) hydroxyr and methy)
 and of the two can complete its life cycle without the other? (1) <i>Hortitla</i> (2) <i>Yaca</i> (3) <i>Yaca</i> (4) <i>Prava</i> (5) <i>Corres</i> (6) <i>Cranse</i> (7) <i>Creen subput bacteris</i> (8) <i>Corres</i> (9) <i>Corres</i>	92.	which one of the following planes shoth, where	(2) carbony and hydroxyl
 (a) carbony and process in not a product of light reaction of photosynthesis? (b) Which of the following not photosynthesis of photosynthesis? (c) Which of the following forms is iron absorbed by phants? (c) Norre (close relationship with a spect its life cycle without	(3) carbonyl and in boshate
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 (a) Viels (b) Banana (c) Orgens autophor bacteris (c) Notice 		(2) Yuccu	reaction of photosyn -
 (4) Banna (9) Oxygen is not produced during photosynthesis by (1) Grees sulphur bacteria (2) Notified (3) Chare (4) Cycas (4) Cycas (5) Chare (5) Chare (6) Cycas (6) Cycas (7) For Forice (7) Forrice (7) Forrice (8) Both Ferric and Gerrous (9) Fore element (9) Fore element (9) Formation of several years (9) Formation of several years (9) Folassium (9) Sodium (9) Colours (1) Fuer is several years (1) Fortasion (2) Sodium (3) Calcium (4) Colours (5) Sodium (5) Colours (6) For several years (7) Follen grains can be stored for several years (8) Which of the following a temperature of (1) Fortasium (7) Follen grains can be stored for several years (9) Sodium (9) Colours (1) Fuer is several years (1) Fortasium (2) Sodium (3) Calcium (4) Folassium (5) Folassium (7) Folassium (7) Follen grains can be stored for several years (1) Fuer is suged write wite reperature of (1) Fortasium (7) Follen grains can be stored for several years (1) Fuering which separation of the parent (2) Sodium (3) Calcium (4) Folassium (5) Sodium (5) Colou (5) - 160°C (5) - 16		(3) Viola	
 9. Oxygen is not produced during photosynthesis by (1) Green subput bacteria (2) Nostoc (3) Chare (4) Cycas (4) Cycas (4) Cycas (5) Colycas (4) Cycas (5) Ferric (2) Ferric (3) Both ferric and ferrous (4) Free element (5) Double fertilization is (1) Fusion of two male gametes of a pollen tube with two different eggs (2) Fusion of two male gametes with two polar nuclei (3) Syngany and triple fusion (4) Fusion of two male gametes with one egg (5) Which of the following elements is responsible for maintaining turgor in cells? (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (7) Follen grains can be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 16°°C (3) - 16°°C (4) - 196°C ANHCANZZIPage ¹³ (3) Cartin (4) For ROUGH WORK (3) Cartin (4) Diak inesis (4) Diak inesis (5) Fer ROUGH WORK (5) Chare (6) MaDPH (1) Stomatal movement is not affected by (1) Carbination of secretary vesicles (3) Activation of amino acid (4) Respiration in bacteria (3) Mich of the following is true for nucleolus ? (1) Lagger nucleol is or present in dividing cells, (2) It is a site for active ribosonal RNA synthesis. (4) It takes part in spinele formation. (5) The stage during which separation of the parted homologous the monomes begins is (1) Pachytene (2) Diplotene (3) Zygotene (4) Diak inesis (5) The stage during which separation of the parted homologous the monomes begins is (1) Pachytene (3) Zygotene (4) Diak inesis (4) Diak inesis (5) Engletene (6) Diak inesis (6) Diak inesis (7) Pollene (8) Zygotene (9) Diakene (9) Diakene (9) Diakene (9) Diak inesis (9) Exportene (9) Diak inesis (9) Exportene (9) Diakene (9) Diakene (9) Diakene (9) Diakene (9) Diak inesis (9) Exportene (9) Diak inesis (9) Exportene (9) Diakene (9) Diakene (9) Diak inesis (9) Exportene (9) Diakene (9) Diakene		(4) Banana	(2) NADH
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 11. Stomatal ubvegate 12. Chare 13. Chare 14. Stomatal ubvegate 15. Cogo as 16. Ferrie 17. Ferre element 18. Stomatal ubvegate 19. Stomatal ubvegate 11. Stomatal ubvegate 11. Stomatal ubvegate 12. Light 13. COg concentration 14. Stomatal ubvegate 15. Double fertilization is 16. Fore element 16. Double fertilization is 17. Forlien grains can be stored for several years in kiquid nitrogen having a temperature of 10 100°C 11. Stomatal ubvegate 13. Syngamy and triple fusion 14. Stomatal ubvegate 15. Double fertilization is 16. Stomatal ubvegate 17. Follen grains can be stored for several years in kiquid nitrogen having a temperature of 10 100°C 11. Stomatal ubvegate 13. Syngaes 14. Stomatal ubvegate 15. Double fertilization is 16. Stomatal indovegate 16. Stomatal ubvegate 17. Follen grains can be stored for several years in kiquid nitrogen having a temperature of 11 100°C 12. Stomatal in grass leaf are 13. Stomatal in grass leaf are 14. Stomatal in grass leaf are 15. The stage during which separation of the pared homologous thromoses begins is 16. The stage during which separation of the pared homologous thromoses begins is 13. Ergene 14. Diak inesis 15. The Stage during which separation of the pared homologous thromoses begins is 13. Space FOR ROUGH WORK 	93.	(1) Green sulphur bacteria	(4) NADIN
 (1) Temperature (2) Cyreas (3) Cyreas (4) Cyreas (5) Colyconcentration (6) Og concentration (7) Ferrous (8) Evaluation is (9) Free element (9) Double fertilization is (1) Fusion of two male gametes of a pollen tothwith two different eggs (2) Fusion of one male gametes with two polar nuclei (3) Syngamy and triple fusion (4) Fusion of two male gametes with one egg (6) Which of the following elements is responsible for maintaining turgor in cells? (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (5) Colling rains can be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C SPACE FOR ROUGH WORK		(1) Nostoc	101. Stomatal movement is the
 G. Cycas G. Which of the following forms is iron absorbed by plants? G. Ferrice G. Ferrous G. Bouble fertilization is Fusion of two male gametes of a pollen trute with two different eggs Fusion of two male gametes with one egg G. Which of the following elements is responsible for maintaining turgor in cells? Magnesium Sodium Calcium Poleng grains can be stored for several years in liquid mitrogen having a temperature of (1) - 120°C G. Bord G. Bord Magnesium Sodium G. Cog concentration Magnesium Sodium G. Cog concentration Magnesium Sodium Sodium Calcium Poleng grains can be stored for several years in liquid mitrogen having a temperature of (1) - 120°C G. Bord Herric State Correct C		(2) Chara	(1) Temperature
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 (2) Ferrous (3) Both ferrie and ferrous (4) Free element (5) Double fertilization is (1) Eusion of two male gametes of a pollen tube with two different eggs (2) Formation of secretory vesicles (3) Activation of amino acid (4) Respiration in bacteria (3) Syngany and triple fusion (3) Syngany and triple fusion (4) Fusion of two male gametes with one egg (5) Which of the following elements is responsible for maintaining turgor in cells? (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (5) Collen grains can be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C (5) SPACE FOR ROUGH WORK 		(1) Ferric	(1) Fatty acid breakdown
 (d) Free element (e) Free element (f) Eusion of two male gametes of a pollen tote with two different eggs (g) Fusion of one male gamete with two polar nuclei (g) Syngany and triple fusion (h) Fusion of two male gametes with one egg (g) Which of the following elements is responsible for maintaining turgor in cells? (h) Magnesium (g) Sodium (g) Calcium (h) Potassium (h) Pot		(2) Ferrous Dul farrie and ferrous	(a) Formation of secretory vesicles
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 (1) Larger nucleon are present to be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C (1) Larger nucleon are present to be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C (5) SPACE FOR ROUGH WORK 		(1) Fusion of two male gametes of a post	103. Which of the tonowing is the option of the dividing cells.
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 (3) Syngamy and utiple totols (4) Fusion of two male gametes with one egg (5) Which of the following elements is responsible for maintaining turgor in cells ? (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (5) Colcium (6) Potassium (7) Pollen grains can be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C (4) Stomata in grass leaf are (1) Dumb-bell shaped (2) Kidney shaped (3) Barrel shaped (4) Rectangular (5) The stage during which separation of the pared homologous chromosomes begins is (1) Pachytene (2) Diplotene (3) Zygotene (4) Diak inesis 		nuclei	(3) It is a site for active mostime.
 (4) Fusion of two male gamenes with the following elements is responsible for maintaining turgor in cells? (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (5) Calcium (6) Potassium (7) Pollen grains can be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C (5) SPACE FOR ROUGH WORK 		(3) Syngamy and the gameter with one egg	synthesis.
 6. Which of the following elements is responsible to maintaining turgor in cells? (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (7) Pollen grains can be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C SPACE FOR ROUGH WORK ALHCA/ZZ/Page 13 104. Stomata in grass leaf are (1) Dumb-bell shaped (2) Kidney shaped (3) Barrel shaped (4) Rectangular 105. The stage during which separation of the paired homologous chromosomes begins is (1) Pachytene (2) Diplotene (3) Zygotene (4) Diak inesis 		(4) Fusion of two male gametes and	(4) It takes part in spindle formation.
 maintaining turgor in cells ? (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (7) Pollen grains can be stored for several years in liquid nitrogen having a temperature of (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C (4) - 196°C (5) SPACE FOR ROUGH WORK 	6.	Which of the following elements is responsible in	104 Stomatain grass leaf are
 (1) Magnesium (2) Sodium (3) Calcium (4) Potassium (7) Pollen grains can be stored for several years in liquid nitrogen having a temperature of (1) -120°C (2) Kidney shaped (3) Barrel shaped (4) Rectangular 105. The stage during which separation of the pared homologous chromosomes begins is (1) Pachytene (2) Diplotene (3) Zygotene (4) Diakinesis English 		maintaining turgor in cells ?	(1) Dumb-bell shaped
 (2) Sodium (3) Calcium (4) Potassium (5) Finitely and the separation of the paired (6) Barrel shaped (7) Pollen grains can be stored for several years in liquid nitrogen baving a temperature of (1) -120°C (2) - 80°C (3) - 160°C (4) Diak inesis 		(1) Magnesium	(1) Kidney shaped
 (3) Calcium (4) Potassium (5) Duriting the separation of the paired homologous choromosomes begins is homologous choromosomes begins is (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C (5) Duriting the separation of the paired homologous choromosomes begins is (1) Pachytene (2) Diplotene (3) Zygotene (4) Diak inesis 		(2) Sodium	(2) Barrel shaped
 (d) Potassium (e) Potassium (f) Potassium (g) Potassium (h) Pollen grains can be stored for several years in liquid nitrogen having a temperature of (l) -120°C (g) -80°C (g) -160°C (g) -196°C (h) Pachytene (h) Pachytene<td></td><td>(3) Calcium</td><td>(3) Barrer (3) (4) Rectangular (5) Starred</td>		(3) Calcium	(3) Barrer (3) (4) Rectangular (5) Starred
 (4) Foundation (4) Foundation (4) Pollen grains can be stored for several years in liquid nitrogen having a temperature of (1) -120°C (2) -80°C (3) -160°C (4) -196°C (5) The stage doring homologous chromosomes begins is homologous chromosomes beg		(a) Potassium	(4) during which separation of the person
 biquid nitrogen having a temperature of (1) -120°C (2) -80°C (3) -160°C (4) -196°C AI.HCA/ZZ/Page 13 		(4) I toused a bastored for several years	m 105. The stage doring mosomes begins is
liquid nitrogen flavilig a verifier (1) - 120°C (2) - 80°C (3) - 160°C (4) - 196°C SPACE FOR ROUGH WORK Al.HCA/ZZ/Page 13	97.	Pollen grains can be stored at the perature of	homologous
(1) - 120°C (2) Diplorent (2) - 80°C (3) Zygotene (3) - 160°C (4) Diak inesis (4) - 196°C SPACE FOR ROUGH WORK		liquid nitrogen having a compet	(1) Pacific tene
(2) - 80°C (3) Zygototic (3) - 160°C (4) Diak inesis (4) - 196°C SPACE FOR ROUGH WORK Al.HCA/ZZ/Page 13 SPACE FOR ROUGH WORK		$(1) = 120^{\circ}C$	(2) Diplotend
(3) - 160°C (4) - 196°C AI.HCA/ZZ/Page 13 AI.HCA/ZZ/Page 13		(2) -80° C	(3) Dygorout English
(4) - 196°C AI.HCA/ZZ/Page 13 SPACE FOR ROUGH WORK		(3) -160° C	(4) DIBETTON
ALHCA/ZZ/Page 13		(4) - 196°C	OR ROUGH WORK
ALHCA/ZZ/Page 13		SPACE P	
	AI.t	ica/zz/page 13	

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	. 111	2. Sel	ect the correct match :				
106. Which of the following is commonly used as vector for introducing a DNA fragment in huma		(1)	Alec Jeffreys	- Streptococcue	110	Niche i	S
lymphocytes ?	10	(2)	Alfred Hershey and	- TMY		(1) a	ll the biol
(1) Retrovirus			Martha Chase			e	nvironmer
(2) Ti plasmid		(3)	Francois Jacob and	- Lec operan		(2) 4	ne physics
(3) pBR 322			Jacques Monod		1	(3) 0	where it li
(4)) phage 107. Use of bioresources by multinational companie	S	(4)	Matthew Meselson and F. Stahl	- Pisum sotium		(4) t	be range needs to li
and organisations without a uthorisation from an concerned country and its people is called	113	. Whi pres	ich of the following has serving pollen as fossils ?	s proved helpfol R	120.	In str	atosphere
(1) Bio-infringemont		(1)	Pollenkitt			acts	as a cata
(2) Biopiracy		(2)	Cellulosic intine			(1)	Carbon
(3) Bioexploitation		(3)	Sporopollenin			(2)	Cì
(4) Biodegradation	1	(4)	Oil content			(3)	Oxygen
108. In India, the organisation responsible for assessing the safety of introducing genetically	114.	The repl	experimental proof for ication of DNA was first a	or semiconservating		(4)	Fe
modified organisms for public use is		(1)	Fungus		121	Wha	it type
(1) Indian Council of Medical Research (ICMR)		(2)	Bacterium			ODia	Soconda
(2) Council for Scientific and Industrial Research (CSIR)		(3) (4)	Virus Plant				Primary
(3) Genetic Engineering Appraisal Committee (GEAC)	115.	Whic	h of the following bed?	pairs is corong	y	(1)	Primary Inverte
(4) Research Committee on Genetic		(1)	Starch synthesis in pos	. Makil at		(2)	Pyrami
Manipulation (RCGM)		(2)	ABO blood grouping	Munple allela	<u>के</u>	(3)	Unrigh
109. The correct order of steps in Polymerase Choice		(3)	TH Mome	: Co-deminance			(Inda)
Reaction (PCR) is		[1]	YO have	: Linkage		(4)	Ohußr
(1) Extension, Denaturation, Annealing		(+)	determination	: Grassbopper	12	2. Wł	aich of the
(2) Annealing, Extension, Denaturation	116		a set thread (101)			(1)	CO
(3) Denaturation, Annealing, Extension	110.		is are produced by			(2) CO ₂
(4) Denaturation, Extension Appealing		(1)	Mitotic divisions			10	
110. Select the set		(3)	Parhan Anna Anna Anna Anna Anna Anna Anna A			(3	, 03
VI AGELL LIP COPPOSE make		101					1 00

i uater uater. -0 -4 - 013 $(4) 50_2$ Partheno.arpy-(4) (1) Ribozyme Nucleic acid 117. Select the correct statement : 123. World Ozo $F_2 \times \text{Recessive parent}$ (2) Dihybrid cross (1)Franklin Stahl coined the term "linkage". 5th J (3) G Mendel (1) Transformation (2) T.H. Morgan Punnett square was developed by a British (4) 21st Transduction (2)scientist. 111. A new' variety of rice was patented by a foreign (3)Transduction was discovered by S. Altman. 22nd (3)company, though such varieties have been (4) present in India for a long time. This is related to 118. Which of the following flowers only once in its Spliceosomes take part in translation. (4) 16th (1) 124. Natality life-time ? (2) Sharbati Sonora (1) (1)Dea Bamboo species (3) Basmati (2)(2)Jackfruit Bir (4) Lerma Rojo (3)Papaya (3) Nu ALHCA/ZZ/Page 14 (4) Mango (4) Nus SPACE FOR ROUGH WORK ALHCA/ZZ/Pag English

			Column I with those in
		11	125. Match the items given in Containing option given
119.	Niche	e 18	Column II and select the
	(1)	all the biological factors in the organisme	below : Column II
	(0)	the physical space where an organism lives	Column 1 It is a place having a
	(2)	the functional role played by the organism	a. Herbarium 1. collection of preserved.
	(3)	where it lives	plants and animals.
	(4)	the range of temperature that the organism	ii. A list that enumerates
		needs to live	b. Key methodically all the
.00	In st	ratosphere, which of the following elements	species found in an one
120.	acts	as a catalyst in degradation of ozone and	with brief description.
	relea	se of molecular oxygen :	aiding identified and
	(1)	Carbon	c. Museum iii. Is a place managed plant specimens
	(2)	Omerop	mounted on sheets are
	(3)	Oxygen	kept
	(4)	re and would be	A booklet containing a list
121.	What	t type of ecological pyramid would	d. Catalogue of characters and their
	obtau	Geoordary consumer : 120 g	alternates which are
		Deimary consumer : 60 g	helpful in identification of
		Drimary producer : 10 g	various taxa.
	1.00	Frinary produced of biomass	a b c d
	(1)	Inverteu pyrainte or and	(1) i iv iii ii
	(2)	Pyramid of energy	(2) iii ii, i iv
	(3)	Upright pyramid of numbers	(3) iii iv i ii.
	(4)	Upright pyramid of numbers	(4) ii iv iii i
122.	Whic	ch of the following is a secondary pollutant.	In matched ?
	(1)	CO	126. Which one is wrongly matched - Polysiphonia
	(0)	CO.	(1) Unifiagenate gametes - Brown algae
	(2)	002	(2) Biflagenate zoosporce (2) Unicellular organism – Chlorella
	(3)	03	(3) Unicellular organistic – Marchantia
	(4)	SO ₂	(4) Genina cups
100	Worl	d Ozone Day is celebrated on	127 After karvogamy followed by meiosis, spores
123.	WOL		produced exogenously in
	(1)	5 th June	(1) Neurospora
	(2)	21 st April	(2) Alternaria
	(4)		(3) Saccharomyces
	(3)	22 nd April	(4) Agaricus
	(4)	16 th September	lun grains are present in
100		111 Pounto	128. Winged polici grand
124.	Nata	anty refers to	(1) Mustary Cheas
	(1)	Death rate	(2) Cycus (2) Pinus
	(2)	Birth rate	t (4) Mango
	(3)	Number of individuals entering the habita	at (4) the Eng
	(4)	Number of individuals leaving the	OR ROUGH WORK

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It difference between amylose and amylopectin 147.

- Appropectin have $1 \rightarrow 4$ α -linkage and 1-+ 6 a-linkage
- Amylose have $1 \rightarrow 4$ α -linkage and 1->6 B-linkage
- Anylose is made up of glucose and galactose
- Amylopectin have $1 \rightarrow 4 \alpha$ -linkage and 1-+ 6β-linkage

Regarding cross-linked or network polymers, 145 which of the following statements is incorrect?

- They contain covalent bonds between 11 various linear polymer chains.
- They are formed from bi- and tri-functional (2)monomers.
- They contain strong covalent bonds in their (3) polymer chains.
- Examples are bakelite and melamine. 14)
- 141 A mixture of 2.3 g formic acid and 4.5 g oxalic acid is treated with conc. H₂SO₄. The evolved gaseous mixture is passed through KOH pellets. Weight (in g) of the remaining product at STP will be
 - (1)1-4
 - (2)3.0
 - 4.4 (3)
 - 2.8 (4)
- 145. Which of the following oxides is most acidic in nature?
 - (1) MgO
 - (2)BeO
 - **(B)** CaO
 - (4) BaO

The compound A on treatment with Na gives B, and with PCl₅ gives C. B and C react together to give diethyl ether. A, B and C are in the order

- (1) $C_2H_5OH, C_2H_6, C_2H_5Cl$
- C₂H₅OH, C₂H₅Cl, C₂H₅ONa (2)
- C₂H₅OH, C₂H₅ONa, C₂H₅Cl (3)
- C₂H₅Cl, C₂H₆, C₂H₅OH (4)
- 148. Hydrocarbon (A) reacts with bromine by substitution to form an alkyl bromide which by Wurtz reaction is converted to gaseous hydrocarbon containing less than four carbon atoms. (A) is
 - CH = CH(1)
 - $CH_{2} = CH_{2}$ $\{\mathbf{2}\}$
 - CH4 (3)
 - $CH_3 CH_3$ (4)
- 149. The compound C_7H_8 undergoes the following reactions :

$$C_7H_8 \xrightarrow{3 Cl_2/\Delta} Br_2/Fe B \xrightarrow{Zn/HCl} C$$

The product 'C' is

- *m*-bromotoluene (1)
- (2)o-bromotoluene
- p-bromotoluene $(\mathbf{3})$
- 3-bromo-2,4,6-trichlorotoluene (4)

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e

- 146. Nitration of anilize in strong acidic medium also 150. Which oxide of nitrogen is not a common gives m-nitroaniline because
 - In spite of substituents nitro group always $\{1\}$ goes to only m-position.
 - In electrophilic substitution reactions (2) amino group is meta directive.
 - In acidic (strong) medium aniline is present (3)as anilinium ion.
 - In absence of substituents nitro group (4)always goes to m-position. SPACE FOR ROUGH WORK

pollutant introduced into the atmosphere both due to natural and human activity ?

- N205 (1)
- NO2 (2)
- NO (3)

 N_2O (4)

English

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	ort order of N-compounds in	
	136. The correct of oxidation states is	143
129. Pneumatophores occur in	decreasing NO, N2, NH4Cl	
(1) Halophytes	(1) HIVOS, FRANK IN ON THE CL No	
(2) Free-floating hydrophytes	(2) HNO_3 , NO, $NO_4O_4O_2$	
(4) Cornivorous plants	(8) NH_4Cl, N_2, NO, HNO_3	
130. Plants having little or no secondary growth are	(4) HNO_3 , NH_4Cl , NO , N_2	
(1) Grasses	and a conter of atomic radii in group 13	
(2) Deciduous angiosperms	137. The correct order of	
(3) Cycads	P < Al < ln < Ga < Tl	
(4) Conifers	$\prod_{n=1}^{\infty} p < Al < Ga < In < Tl$	14
131. Casparian strips occur in	(2) B < A < [n < T]	
(1) Epidermis	(3) B < Ga < AI < III < III	
(2) Pericycle	$(4) \mathbf{B} < \mathbf{Ga} < \mathbf{A}\mathbf{I} < \mathbf{II} < \mathbf{In}$	
(3) Endodermis	138. Considering Ellingham diagram, which of the	
(4) Cortex	following metals can be used to reduce alumina?	
132. Secondary xylem and pbloem in disot stem are produced by	(1) Fe	
(1) Apical meriscens	(2) $\mathcal{L}n$	
(2) Vascular cambine	(3) Cu	1
(3) Axillary meristenis	(4) Mg	
(4) Phellogen	139. Which one of the following elements is unable to	
133. Select the wrong statement :	form MF ₆ ³⁻ ion ?	
(1) Cell wall is present in members of Fungi and Plantae.	(1) Ga	
(2) Mushrooms belong to Basidiomycetes.	(2) A1	
(3) Mitochoudria are the powerhouse of the cell in all kingdoms except Monera.	(3) In (4) P	
(4) Pseudopodia are locomotory and feeding structures in Sporozoans.	(4) B140. Which of the following statements is not true for	T
134. Which of the following statements is correct ?	halogens ?	
(1) Ovules are not enclosed by ovary wall in	 All form monobasic oxyacids. 	
gymnosperms.	(2) All are oxidizing agonts	

- (2) Selasinelle is heterosporous, while Selvinia a homosporous.
- (3) Stems are usually unbranched in both Cycas and Cedrus.
- (4) Horsetails are gymnosperms.
- 135. Sweet potato is a modified
 - (1) Stem
 - (2) Adventitious root (3) Rhizome
 - (4) Tap root

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- (3) Chlorine has the highest electron-gain
 - enthalpy.
- All but fluorine show positive oxidation (4) states.

Engipi

- 141. In the structure of ClF₃, the number of lone pairs of electrons on central atom 'Cl' is (1) one
 - (2) two
 - (3) three
 - (4) four

- 151. Which of the following molecules represents the 154. In the reaction order of hybridisation sp², sp², sp, sp from left to right atoms ?
 - $HC \equiv C C \equiv CH$ (1)
 - $\mathrm{CH}_2 = \mathrm{CH} \mathrm{C} \equiv \mathrm{CH}$ (2)
 - $CH_3 CH = CH CH_3$ (3)
 - (4) $CH_2 = CH CH = CH_2$
- 152. Which of the following carbocations is expected to be most stable ?



NO₂



+ CHCl₃ + NaOH

- the electrophile involved is
- dichloromethyl cation (CHCl2)
- (1)formyl cation (CHO)
- (2)
- dichlorocarbene (:CCl2) (3)
- dichloromethyl anion (CHCl2) (4)
- Carboxylic acids have higher boiling points than aldehydes, ketones and even alcohols of 155. comparable molecular mass. It is due to their
 - formation of intramolecular H-bonding (1)
 - formation of carboxylate ion (2)
 - formation of intermolecular H-bonding (3)
 - more extensive association of carboxylic (4)
 - acid via van der Waals force of attraction
- 156. Compound A, C₈H₁₀O, is found to react with NaOI (produced by reacting Y with NaOH) and yields a yellow precipitate with characteristic smell.

A and Y are respectively

(2)

- $H_3C \longrightarrow CH_2 OH and I_2$ (1)
 - $CH_2 CH_2 OH and I_2$

158. Whi

ZWI

(1)

(2)

(3)

(4)

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English

157. Identify

O'Na+

CHO

following

(1)

(2)

(3)

(4)

(4)

(3)

(2)



- (1) $-NH_2 < -OR < -F$
- (2) $-NR_2 < -OR < -F$
- (3) $-NR_2 > -OR > -F$
- (4) $-NH_2 > -OR > -F$

(3) CH₃ OH and I₂

CH - CH₃ and I₂ (4)OH

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Na⁺ CHO

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Anhydrous AlCl₃ $+ CH_3CH_2CH_2CI$ $P \xrightarrow{(i) O_2} Q + R$ Q R P CH2CH2CH3 CHO $CH_3CH_2 - OH$ (1)COOH CH2CH2CH3 CHO (2)OH $CH_8 - CO - CH_3$ $CH(CH_3)_2$ (3)CH(CH₃)₂ OH CH₃CH(OH)CH₃ (4)

following sequence of reactions :

by the major products P, Q and R in the 159. For the redox reaction $MnO_4^- + C_2O_4^{2-} + H^+ \longrightarrow Mn^{2+} + CO_2 + H_2O_3$

the correct coefficients of the reactants for the balanced equation are

	MDO ₄	$C_2 O_4^{2-}$	Ht
1)	16	5	2
2)	2	5	16
3}	5	16	2
4)	2	16	5

160. Which one of the following conditions will favour maximum formation of the product in the reaction,

 $A_2(g) + B_2(g) \rightleftharpoons X_2(g) \Delta_r H = -X k J?$

- Low temperature and high pressure (1)
- Low temperature and low pressure $(\mathbf{2})$
- High temperature and low pressure (3)
- High temperature and high pressure (4)

161. When initial concentration of the reactant is doubled, the half-life period of a zero order reaction

- is halved (1)
- is doubled $(\mathbf{2})$
- remains unchanged (3)
- is tripled (4)

162. The correction factor 'a' to the ideal gas equation corresponds to

- density of the gas molecules (1)
- volume of the gas molecules (2)

200 kJ mol⁻¹

100 kJ mol⁻¹

400 kJ moi⁻¹

800 kJ mol¹

(1)

(2)

(3)

(4)

- forces of attraction between the gas (3)molecules
- electric field present between the gas (4)molecules

English

163. The bond dissociation energies of X_2 , Y_2 and XY158. Which of the following compounds can form a are in the ratio of 1:05:1. AH for the formation of XY is -200 kJ mol^{-1} . The bond dissociation zwitterion ? energy of X2 will be

- Aniline (1)
- Acetanilide (2)
- Glycine (3)
- Benzoic acid (4)

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SPACE FOR ROUGH WORK

nglish

rst- and	172. The	solubility of BaSO ₄ in water is 10^{-3} gL ⁻¹ at 298 K. The value of its
does not the rate	2.4. solu (Giv	bility product (K_{sp}) will be en molar mass of $BaSO_4 = 233 \text{ g mol}^{-1}$)
laes not	(1)	$1.08 \times 10^{-10} \text{ mol}^2 \text{ L}^{-2}$
of a	(2)	$1.08 \times 10^{-12} \text{ mol}^2 \text{ L}^{-2}$
[A] ₀ does	(3)	$1.08 \times 10^{-8} \text{ mol}^2 \text{ L}^{-2}$

- (4) $1.08 \times 10^{-14} \text{ mol}^2 \text{ L}^{-2}$
- 173. Following solutions were prepared by mixing different volumes of NaOH and HCl of different concentrations :
 - $60 \text{ mL} \frac{\text{M}}{10} \text{ HCl} + 40 \text{ mL} \frac{\text{M}}{10} \text{ NaOH}$ a. b. 55 mL $\frac{M}{10}$ HCl + 45 mL $\frac{M}{10}$ NaOH $75 \text{ mL} \frac{\text{M}}{5} \text{ HCl} + 25 \text{ mL} \frac{\text{M}}{5} \text{ NaOH}$ c. $100 \text{ mL} \frac{\text{M}}{10} \text{ HCl} + 100 \text{ mL} \frac{\text{M}}{10} \text{ NaOH}$ d. pH of which one of them will be equal to 1? (1)(2)
 - (3)

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- d (4)
- 174. coagulating power of an ion depend ?
 - The magnitude of the charge on the ion (1)alone
 - Size of the ion alone (2)
 - The sign of charge on the ion alone (3) (4) Both magnitude and sign of the charge on the ion

- is 176. Iron carbonyl, Fe(CO)₅ is tetranuclear (1)mononuclear (2)dinuclear (3)trinuclear (4)177. The type of isomerism shown by the complex [CoCl2(en)2] is Geometrical isomerism (1)Coordination isomerism (2)Linkage isomerism (3)Ionization isomerism (4)178. Which one of the following ions exhibits d-d transition and paramagnetism as well ? CrO₄²⁻ (1)(2) $Cr_2O_7^{2-}$ (3) MnO_4^{2-} MnO₄ (4)179. The geometry and magnetic behaviour of the complex [Ni(CO)₄] are square planar geometry and diamagnetic (1)tetrahedral geometry and diamagnetic (2)tetrahedral geometry and paramagnetic (3)
 - square planar geometry and paramagnetic (4)
- On which of the following properties does the 180. Match the metal ions given in Column I with the spin magnetic moments of the ions given in Column II and assign the correct code :

-	Column I		Column II	
a.	Co ³⁺	i.	√8 B.M.	
b.	Cr ³⁺	ü.	$\sqrt{35}$ B.M.	

iii.

iv.

C

ü

ï

Fe³⁺

Ni²⁺

a

iv

iii

iv

b

v

ü

v

i

C.

d.

(1)

(2)

(3)

(4)

175. Given van der Waals constant for NH3, H2, O2 and CO2 are respectively 4.17, 0.244, 1.36 and 3.59, which one of the following gases is most easily liquefied ?

- NH3 (1)
- H_2 (2)
- CO_2 (3)
- 02 (4)

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√15 B.M. v. d i iii iv ü iii ii

English

√3 B.M.

√24 B.M.

Read carefully the following instructions:

- 1. Each candidate must show on demand his/her Admit Card to the Invigilator.
- No candidate, without special permission of the Superintendent or Invigilator, would leave his/her seat.
- 3. The candidates should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty and sign the Attendance Sheet twice. Cases where a candidate has not signed the Attendance Sheet second time will be deemed not to have handed over the Answer Sheet and dealt with as an unfair means case.
- 4. Use of Electronic/Manual Calculator is prohibited.
- 5. The candidates are governed by all Rules and Regulations of the examination with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per Rules and Regulations of this examination.
- 6. No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.
- The candidates will write the Correct Test Booklet Code as given in the Test Booklet/Answer Sheet in the Attendance Sheet.

