130. Four words are shown below:

Branchiocerianthus sexual reproduction nutritive Hydra

These words can be used in the spaces P, Q, R and S to complete the sentence below.

The coelenterates range in size from microscopic ___P___ to macroscopic, ___Q___, a hydrozoan polyp that may reach two metres in length. Cnidarians are found in two basic forms the polyps and the medusae. Polyps are cylindrical animals, which in most cases are, ___R___ in function, hence named as gastrozoids. The medusae are umbrella like in form. These are free swimming. The medusae are involved in ___S___ as they have gonads.

	Branchiocerianthus	Sexual reproduction	Nutritive	Hydra
A.	P	R	S	Q
B.	Q	S	R	P
C.	P	Q	R	S
D.	R	P	Q	S

131. The exoskeleton of _____ is made up of $CaCO_3$.

A. Arthropods
B. Mollusks
C. Echinoderms
D. Chordate

132. Which of the following blood transfusions can be made safely?

A. group A to group B
B. group B to group AB
C. group AB to group O
D. group A to group O

...axial skeleton of an adult human includes:

...the skull, pectoral girdle and ribs
...the skull, ribs and bones of arms and legs
C. the pectoral and pelvic girdles
D. the ribs, the skull, the sternum and the vertebrae

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86. Activation of benzene ring in aniline can be decreased by treating with:

A. dil. HCl
B. ethyl alcohol
C. acetic acid
D. acetyl chloride

87. Ethylamine can be prepared by the action of bromine and caustic potash on:

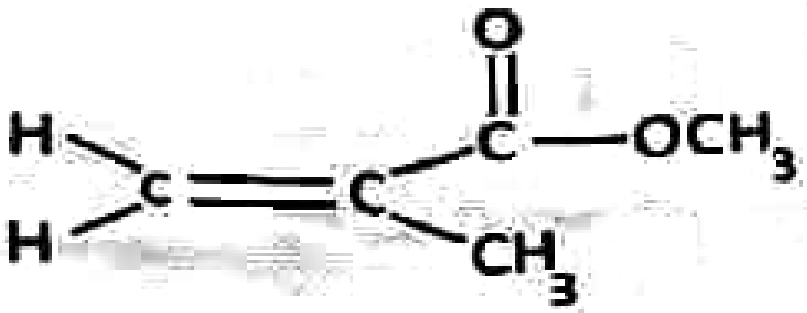
A. Acetamide
B. Propionamide
C. Formamide
D. Methyl cyanide

88. The reaction of isobutane with an unknown halogen is catalyzed by light. The two major products obtained are:

What is the unknown halogen?

A. Cl_2
B. Br_2
C. I_2
D. F_2

78. One of the chemicals used to make the hard outer covering of gold balls has the following structural formula.



Which of the following statements about this molecule is correct?

A. It is a cis isomer.
B. It is a trans isomer.
C. It has only one chiral centre.
D. It has only structural isomers.

79. The process in which electric mains of iron are dipped in molten zinc is called

A. Galvanization
B. Corrosion
C. Redox
D. Hydrolysis

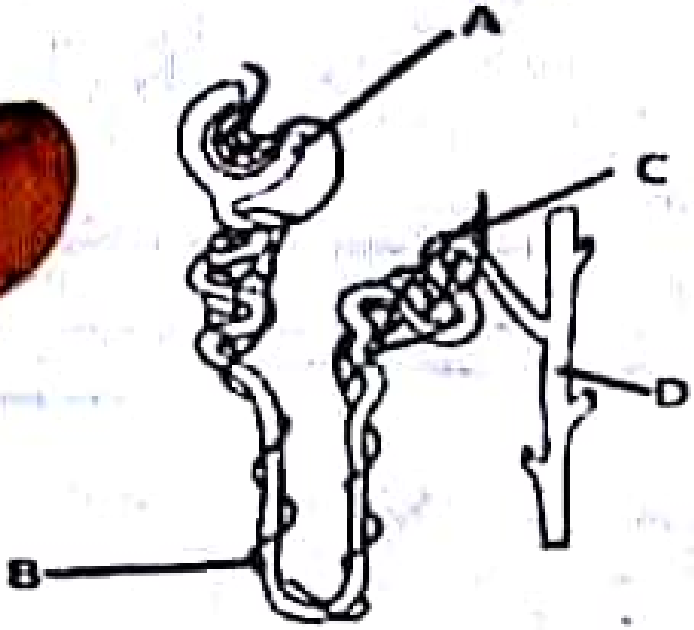
80. In the electrolysis of molten $ZnCl_2$, how much Zn can be deposited at the cathode by the passage of 0.01 ampere for one hour?

A. 0.002 g
B. 0.123 g
C. 0.012 g
D. 0.004 g

81. If the radius of first Bohr orbit is x, then de-Broglie wavelength in the third Bohr orbit is nearly

A. $2\pi x$
B. $6\pi x$
C. $9x$
D. $x/3$

134. Which region of the kidney nephron would normally contain salts?



A. A
B. B
C. C
D. D

135. On receiving the news of sudden demise of a close friend; which is the most probable hormone that is secreted at that time?

A. Prostaglandin
B. Growth inhibitors
C. Estrogen
D. Adrenaline
E. Thyroxin

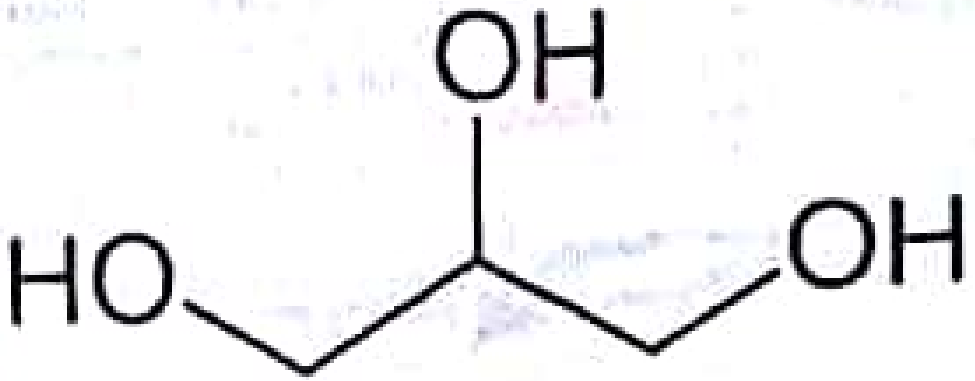
136. Which of the following associations between the hormone and its classification is FALSE?

A. Cortisol - glucocorticoid
B. Aldosterone - mineralcorticoid
C. ADH - mineralcorticoid
D. Androgens - cortical sex hormones

137. The sympathetic nervous system causes which of the following?

A. constriction of the pupil
B. decreased heart rate
C. increased gastric section
D. reduction of adrenaline secretion
E. increased respiration

120. The diagram shows a molecule.



Which substance might include this molecule?

A. Cellulose
B. Cholesterol
C. Glycerol
D. Insulin

121. Which combination describes a triglyceride?

	Soluble in water	Provides energy	Produces water when respired	Soluble in organic solvent
A	x	✓	✓	✓
B	✓	x	✓	x
C	✓	✓	x	x
D	x	✓	x	x

122. First step of viral replication is:

A. Entry
B. Assembly
C. Uncoating
D. Adsorption or Attachment

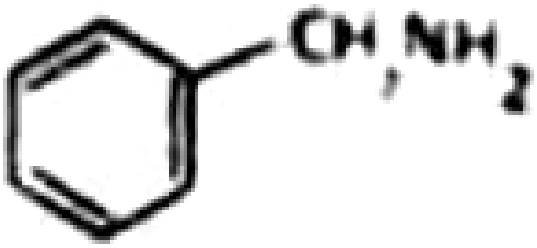
123. The shape of Cocci bacteria is:

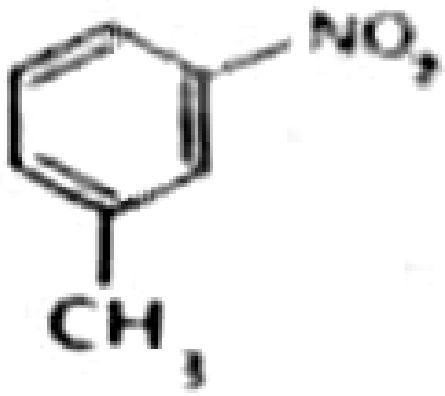
A. Spherical
B. Spring
C. Rod
D. Screw
E. Comma

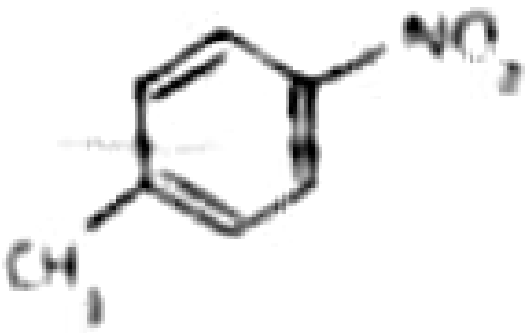
124. Vibrio cholera is an example of _____ type of bacteria.

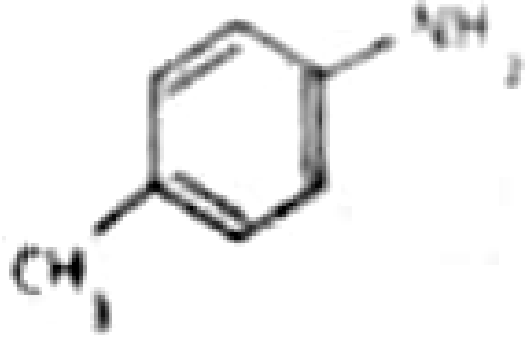
A. Cocci
B. Bacilli
C. Spirilla
D. Commas

[illegible]

a. 

b. 

c. 

d. 

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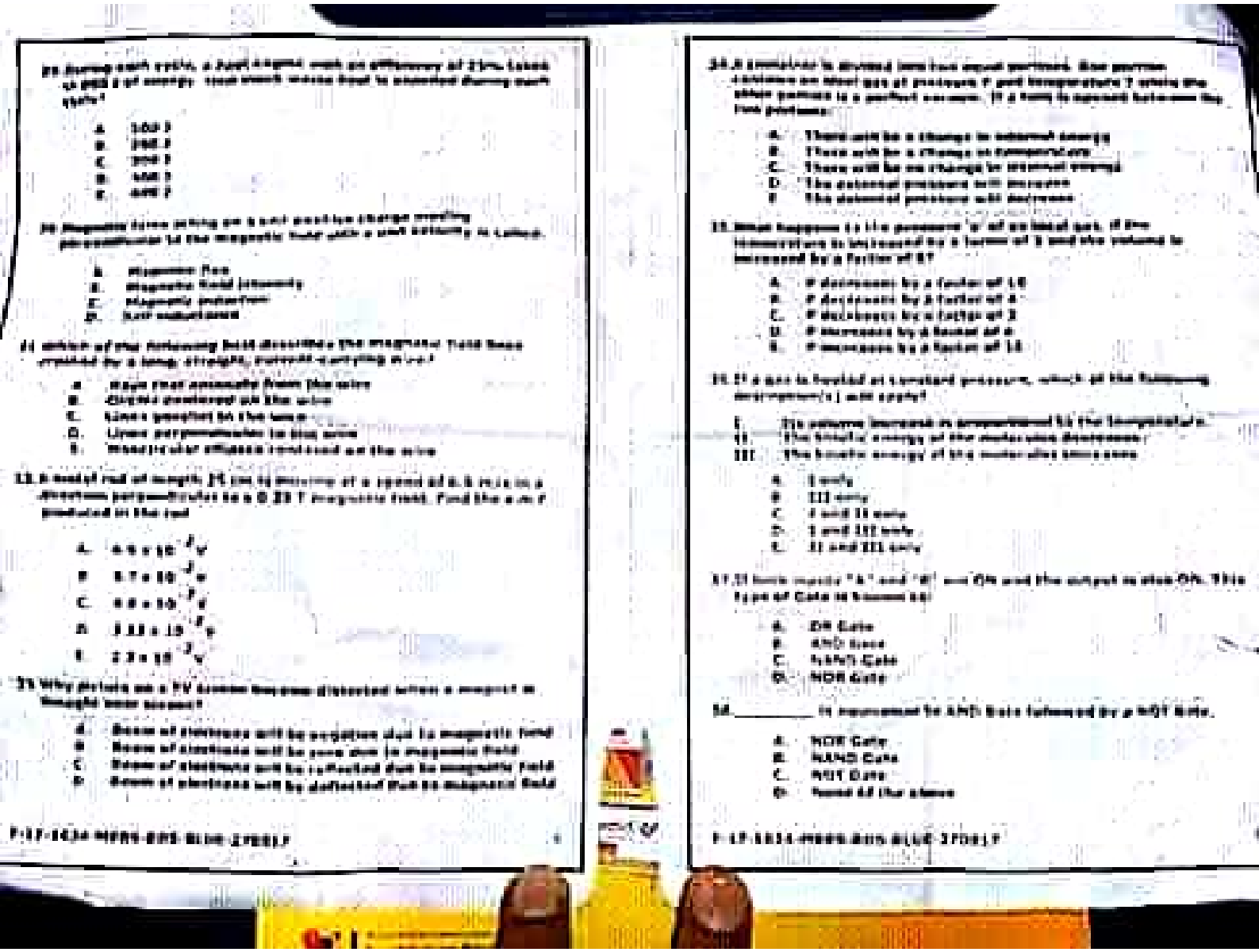

34. A container is divided into two equal portions. One portion contains an ideal gas at pressure P and temperature T while the other portion is a perfect vacuum. If a hole is opened between the two portions:

A. There will be a change in internal energy
B. There will be a change in temperature
C. There will be no change in internal energy
D. The external pressure will increase
E. The external pressure will decrease

35. What happens to the pressure 'p' of an ideal gas, if the temperature is increased by a factor of 3 and the volume is increased by a factor of 8?

A. P decreases by a factor of 16
B. P decreases by a factor of 4
C. P decreases by a factor of 2
D. P increases by a factor of 4
E. P increases by a factor of 16

36. If a gas is heated at constant pressure, which of the following description(s) will apply?

I. Its volume increase is proportional to the temperature
II. The kinetic energy of the molecules decreases
III. The kinetic energy of the molecules increases

A. I only
B. III only
C. I and II only
D. I and III only
E. II and III only

26. A light bulb has resistance of 180 Ω, find the voltage while the current is 1.5A?

A. 150 V
B. 300 V
C. 324 V
D. 225 V

28. How much current does a 60-watt light bulb draw if it operates at a voltage of 120 volts?

A. 0.25 amp
B. 0.5 amp
C. 2 amp
D. 4 amp
E. 30 amp

27. Thirty joules of heat flow into a system. The system in turn does 50 joules of work. The internal energy of the system has:

A. increased by 80 joules
B. decreased by 80 joules
C. increased by 20 joules
D. decreased by 20 joules
E. remained constant

28. Identify the postulate/s which help to formulate a mathematical model of gases

I. A finite volume of gas consists of very large number of molecules.
II. The size of the molecules is much smaller than the separation between molecules.
III. Molecules do not exert force on each other except during a collision.

A. I only
B. II only
C. III only
D. I & II only
E. I, II, & III

[redacted]

a. [redacted]
b. [redacted]
c. [redacted]
d. [redacted]

[redacted]

a. [redacted]
b. [redacted]
c. [redacted]
d. [redacted]

[redacted] "P" but have different mass numbers "A" are called _____ of that element.

a. [redacted]
b. Isotopes
c. [redacted]
d. [redacted]

[redacted]

a. 8
b. 7
c. 3
d. 4
e. 11

[redacted]

a. [redacted]
b. [redacted]
c. [redacted]
d. [redacted]
e. [redacted]

[redacted]

82. The wave number of the first line in the Balmer series of hydrogen is 15200 cm^{-1}. Wave number of the first line in Balmer series of Be^{3+} is

A. $2.43 \times 10^5 cm^{-1}$
B. $1.87 \times 10^5 cm^{-1}$
C. $2.43 \times 10^5 m^{-1}$
D. $1.8 \times 10^5 m^{-1}$

83. If a molecule MX_3 has zero dipole moment, the sigma bonding orbitals used by M are:

A. pure p
B. sp hybrids
C. sp^2 hybrids
D. spa^3 hybrids

84. Given the bond energies, N ≡ N, N- H and H - H bonds are 945, 436 and 391 $kJmol^{-1}$ respectively, The enthalpy of the reaction $N_2(g) + 3H_2(g) \rightarrow 2NH_3(g)$ is

A. -93 kJ
B. 102 kJ
C. 90 kJ
D. 105 kJ

85. Ease of esterification of following acids with CH_3OH

I. HCOOH
II. CH_3COOH
III. CH_3CH_2COOH

A. III < II < I
B. I < II < III
C. II < I < III
D. Equal

125. These protists are mostly unicellular (a few are colonial) organisms with spherical or elongated bodies with a single central nucleus. They possess from one to many long, whip-like flagella that enable them to move. Flagellates move rapidly, pulling themselves forward by lashing flexible flagella, that are usually located at the anterior end. Examples include trypanosome, euglena etc.

The above given lines indicate which of the following group of protozoa?

A. amoeba
B. actinopods
C. foraminifera
D. zooflagellates

126. Which of the following statements is correct?

A. Viruses have their own ribosomes for protein formation
B. New viral ribosomes are formed after viral DNA enters the cell
C. Viruses do not need ribosomes for protein formation.
D. Viruses use the host ribosomes for their own requirements

127. Nictating membrane is found in _____ and performs _____ function.

A. eyes ... cleaning
B. brain ... thinking
C. feet ... locomotion
D. bones ... supporting

128. Platyhelminthes means:

A. Flat worms
B. Round worms
C. Segmented worms
D. None of the above

129. Which of the following phylum and its examples is NOT correct?

A. Nemotoda ... Ascaris and hook worm
B. Annelid ... Nereis and leech
C. Echinodermata ... sea star and brittle star
D. Platyhelminthes ... Planaria and liver fluke
E. Cnidaria ... Euplectell and bath sponge

29. During each cycle, a heat engine with an efficiency of 25% takes in 800 J of energy. How much waste heat is expelled during each cycle?

A. 100 J
B. 200 J
C. 300 J
D. 400 J
E. 600 J

30. Magnetic force acting on a unit positive charge moving perpendicular to the magnetic field with a unit velocity is called:

A. Magnetic flux
B. Magnetic field intensity
C. Magnetic induction
D. Self inductance

31. Which of the following best describes the magnetic field lines created by a long, straight, current-carrying wire?

A. Rays that emanate from the wire
B. Circles centered on the wire
C. Lines parallel to the wire
D. Lines perpendicular to the wire
E. Noncircular ellipses centered on the wire

32. A metal rod of length 25 cm is moving at a speed of 0.5 m/s in a direction perpendicular to a 0.25 T magnetic field. Find the e.m.f. produced in the rod.

A. 6.9×10^{-2} V
B. 5.7×10^{-2} V
C. 4.6×10^{-2} V
D. 3.13×10^{-2} V
E. 2.3×10^{-2} V

33. Why picture on a TV screen became distorted when a magnet is brought near screen?

A. Beam of electrons will be negative due to magnetic field
B. Beam of electrons will be zero due to magnetic field
C. Beam of electrons will be reflected due to magnetic field
D. Beam of electrons will be deflected due to magnetic field

National University of Medical Sciences (NUMS)
(Entry Test/Admissions 2017)

MBBS/BDS

ANSWER KEY (Blue)

Test Held on: Sunday, 27th August 2017

Question No	Correct Option	Question No	Correct Option
Q 1	B	Q 61	D
Q 2	B	Q 62	A
Q 3	C	Q 63	D
Q 4	C	Q 64	C
Q 5	C	Q 65	C
Q 6	B	Q 66	B
Q 7	B	Q 67	A
Q 8	C	Q 68	D
Q 9	A	Q 69	D
Q 10	B	Q 120	A
Q 11	C	Q 101	D
Q 12	C	Q 102	C
Q 13	C	Q 103	D
Q 14	C	Q 104	A
Q 15	D	Q 105	C
Q 16	C	Q 106	C
Q 17	D	Q 107	D
Q 18	D	Q 108	E
Q 19	C	Q 109	C
Q 20	A	Q 110	D
Q 21	D	Q 111	C
Q 22	E	Q 112	C
Q 23	B	Q 113	E
Q 24	E	Q 114	A
Q 25	D	Q 115	C
Q 26	B	Q 116	C
Q 27	D	Q 117	C
Q 28	E	Q 118	D
Q 29	E	Q 119	A
Q 30	C	Q 120	C
Q 31	B	Q 121	A
Q 32	D	Q 122	D
Q 33	D	Q 123	A
Q 34	C	Q 124	D
Q 35	B	Q 125	D
Q 36	B	Q 126	D
Q 37	B	Q 127	A
Q 38	D	Q 128	A
Q 39	B	Q 129	E
Q 40	D	Q 130	B