MDCAT (ETEA entry test) — 2013 · Solved Past Paper

Body: Educational Testing and Evaluation Agency (ETEA) · **Post:** MDCAT (ETEA entry test) · **Year:** 2013 · **Questions:** 200 in the original paper — **179 solved and verified**, 21 excluded as defective (Q5, Q17, Q28, Q32, Q46, Q59, Q65, Q81, Q92, Q98, Q102, Q103, Q131, Q133, Q147, Q153, Q154, Q157, Q173, Q179, Q188) · **Price:** Free

> **How to use this paper:** each question shows the stem, the four options, and the correct answer. Click “Why each option?” under a question to see all four options explained — one question teaches four topics. General Knowledge answers are as of the 2013 sitting.

Source note: Question stems and options: ETEA MDCAT 2013 (Scribd doc 363367615, "ETEA Solved Papers 2010–2017", M. Nawaz Khan Abbasi — Medical 2013, printed pp. 76–83, with the printed answer key on p. 148 (Medical half), accessed 15 Nov 2026). Exam held Sunday 25 August 2013, 09:00 (booknstuff.com ETEA 2013 schedule). 200 MCQs, 3 hours. Printed key letter counts A25 / B67 / C74 / D34. Subjects Biology/Chemistry/Physics/English interleaved across Q1–Q200 (no subject sections in the printed paper). 21 DEFECTIVE-excluded. 20 printed-key corrections. Answers verified independently against reference facts, worked derivations and targeted sources, never from the printed key alone. Decisions by the assistant under the owner's 8 Nov 2026 delegation.

Question 1 Biology

Selaginella is the living member of:

- A. Psilopsida
- B. Lycopsida ✓ **Correct answer**

eriopsida

- D. Pteropsida

Note: Note: The stem prints "Seaginella" (misprint for "Selaginella"); options (a) and (d) print "Psilopslda" and "Pterosida" (misprints for "Psilopsida" and "Pteropsida"); filed as corrected.

Question 2 Chemistry

Which of the following is misnamed?

- A. Aniline
- B. Methyl naphthalene ✓ **Correct answer**
- C. Carboxyl benzene
- D. Benzene sulphonic acid

Question 3 Physics

On the ground the gravitational force on a satellite is W. What is the gravitational force on the satellite when at a height R/50, where R is the radius of the earth?

- A. 1.04W
- B. 1.02W
- C. 0.50W
- D. 0.96W ✓ **Correct answer**

Note: Note: The stem prints "R/SO" (the "5" renders as "S" and "0" as "O" in the text layer); read as R/50 — $F = W/(1 + 1/50)^2 \approx 0.96W$ (d).

Question 4 Biology

Contraction can be sustained for a long period of time by:

- A. Skeletal muscles
- B. Smooth muscles ✓ **Correct answer**

- D. All of the above

Question 5 Chemistry

Aromatic compounds generally burn with smoky llame because:

- A. Skeletal muscles
- B. Smooth muscles
- C. Cardiac muscles
- D. All of the above

No answer is given for this question, and none is taught. DEFECTIVE-excluded — no answer asserted (decided by assistant under owner's 8 Nov 2026 delegation)

Question 6 Physics

If a wave can be polarized, it must be:

- A. An electromagnetic wave
- B. A stationary wave
- C. Transverse wave ✓ **Correct answer**
- D. A longitudinal wave

Question 7 Biology

Amount of DNA in bacterial cell is:

- A. 1% ✓ **Correct answer**
- B. 2%
- C. 3%
- D. 4%

Note: Note: Filed per the printed key (a) — the DNA in a bacterial cell is 1% of the cell (the textbook figure).

8 Chemistry

The smaller the value of pKa:

- A. The weaker the base
- B. The stronger the base ✓ **Correct answer**
- C. The stronger the acid
- D. None of the above

Note: Note: The stem prints "Pkg" (misprint for "pKa"); filed as corrected.

Question 9 Physics

In the nuclear reaction shown below what is the value of coefficient ‘y’? 235U92 + 1n0 -> 89Kr36 + 144Ba56 + y1n0 + 200 MeV

- A. 0
- B. 1
- C. 2
- D. 3 ✓ **Correct answer**

Note: Note: The stem’s equation is garbled in the text layer; read as the U-235 fission reaction 235U92 + 1n0 -> 89Kr36 + 144Ba56 + y1n0 + 200 MeV — mass balance gives y = 3 (d).

Question 10 English

Have you got a computer? She said. Select the correct indirect speech:

- A. She wanted to find whether I have a computer.
- B. She wanted to know whether I had a computer. ✓ **Correct answer**
- C. She wanted to know if I could use computer.
- D. She was interested to know about my computer.

11 Biology

Keratinized Epithelium is found in the:

- A. Hair
- B. Skin ✓ **Correct answer**
- C. Bone
- D. Muscle

Question 12 Chemistry

Why is the boiling point of n-Pentane about 28 °C higher than that of its 2,2-Dimethylpropane isomer?

- A. The area of contact between 2,2-Dimethylpropane is small which results in weak forces of attraction. ✓ **Correct answer**
- B. 2,2-dimethylpropane molecules repel each other
- C. N-pentane molecules cannot come into closer contact with each other
- D. Shapes of molecules have no effect on boiling point

Question 13 Physics

The vectors A and B are such that |A + B| = |A – B|, then the angle between the two vectors is:

- A. 0°
- B. 60°
- C. 90° ✓ **Correct answer**
- D. 180°

Note: Note: The degree symbol renders as "0" in the text layer; read as °.

Question 14 English

Mushrooms belong to:

- B. Ascomycota
- C. Basidiomycota ✓ **Correct answer**
- D. Deuteromycota

Note: Note: The option labels print garbled ("C) Zygomycota (B) Ascomcota / D) Basidiomycota (D) Deutetoinycota"); relabelled A-D by position and the two misspelt names corrected.

Question 15 Chemistry

Which one of the following will not undergo dehydrogenation?

- A. CH3OH
- B. (CH3)2CHOH
- C. (CH3)3COH ✓ **Correct answer**
- D. CH3CH2OH

Note: Note: The stem prints a stray "2" before "will" in the text layer; omitted.

Question 16 Chemistry

Which one is a polymer substance?

- A. Glass
- B. Iron
- C. Plastic ✓ **Correct answer**
- D. copper

Question 17 Biology

In chick development gives rise to:

- A. Ectoderm & Endoderm
- B. Ectoderm & Mesoderm

- D. Mesoderm only

No answer is given for this question, and none is taught. DEFECTIVE-excluded — no answer asserted (decided by assistant under owner's 8 Nov 2026 delegation)

Question 18 Chemistry

The heat of combustion of hydrocarbon is very useful source of heat and power, Considering the combustion reaction given below: CH4(g) + 2O2(g) -> CO2(g) + 2H2O(g), ΔH for the reaction is:

- A. ΔH = 213 kcal/mole
- B. ΔH = −213 kcal/mole ✓ **Correct answer**
- C. ΔH = 426 kcal/mole
- D. ΔH = 312 kcal/mole

Note: Note: The stem's equation is garbled in the text layer; read as CH4(g) + 2O2(g) -> CO2(g) + 2H2O(g). The minus signs are lost in the text layer; the keyed answer is (b) ΔH = −213 kcal/mol (the combustion of methane is exothermic).

Question 19 Physics

A zirconium nucleus is a β-emitter. The product nucleus is also a β-emitter. What is the final resulting nucleus of these two decays?

- A. 100Sr38
- B. 100Mo42 ✓ **Correct answer**
- C. 98Zr40
- D. 102Zr40

Note: Note: The starting nucleus is 100Zr (as the options show); the stem prints "finalresulting" as one word. Option (b)'s atomic-number subscript renders as 41 in the text layer; molybdenum's atomic number is 42 (two β-decays from 100Zr40 give 100Mo42)

in the coming. Filed option B read "100Mo41" (misprint in the source reproduction); corrected to "100Mo42" as documented in the reviewed file.

Question 20 English

Add some milk and sugar..... the tea.

- A. To
- B. At
- C. In ✓ **Correct answer**
- D. On

Note: Note: The keyed answer is "in" (c); "to" is also acceptable English, but the paper keys "in".

Question 21 Chemistry

Rain water becomes acidic, when the pH-value of rain water becomes.

- A. Greater than 6
- B. Greater than 6.5
- C. Less than 5.6 ✓ **Correct answer**
- D. Less than 5

Question 22 Chemistry

Drinking water should be odorless, tasteless and free from turbidity and its pH should range between:

- A. 6.0 to 7.0
- B. 7.0 to 8.5 ✓ **Correct answer**
- C. 4.5 to 6.0
- D. 8.5 to 9.0

Note: Note: The stem prints "Dunking" (misprint for "Drinking") and "livefrom" (for "free

as corrected. The keyed answer is 7.0-8.5 (b); the WHO drinking-water pH range is 6.5-8.5.

Question 23 Physics

A racing car accelerates uniformly through three gear changes with the following average speeds: 20 ms-1 for 2.0 s; 40 ms-1 for 2.0 s and 60 ms-1 for 6.0 s. What is the overall average speed of the car:

- A. 12 ms-1
- B. 13.3 ms-1
- C. 40 ms-1
- D. 48 ms-1 ✓ **Correct answer**

Note: Note: PRINTED-KEY CORRECTION: the key prints C but the average speed is (20x2 + 40x2 + 60x6)/10 = 48 m/s — the correct answer is (d).

Question 24 Biology

Changes in gene frequencies in small population by chance is called:

- A. Gene pool
- B. Genetic drift ✓ **Correct answer**
- C. Gene mutation
- D. Gene flow

Note: Note: Option (b) prints "Genetic dolt" (misprint for "Genetic drift"); filed as corrected. Option (d) carries a stray "△" in the text layer; omitted.

Question 25 Chemistry

$N_2(g) + 3H_2(g) \rightleftharpoons 2NH_3(g)$, $\Delta H = -46.1$ kJ/mole. For the reaction above which statement is true about the equilibrium constant (Keq):

- A. Keq increases with increase in temperature

decreases with increase in temperature ✓ **Correct answer**

- C. Keq decreases with increase in pressure
- D. Keq increases with decrease in pressure

Note: Note: The stem prints "Keg" (for "Keq") and the reaction equation is garbled in the text layer; read as N2(g) + 3H2(g) ⇌ 2NH3(g), ΔH = −46.1 kJ/mole.

Question 26 Physics

Which of the following lists contains scalar quantities only?

- A. Mass, acceleration, temperature, kinetic energy
- B. Mass, volume, electrical potential, kinetic energy ✓ **Correct answer**
- C. Acceleration, temperature, volume, electric charge
- D. Momentum, electric intensity, density, magnetic flux.

Question 27 Biology

Number of chromosomes in Tobacco is:

- A. 45
- B. 48 ✓ **Correct answer**
- C. 46
- D. 47

Question 28 Chemistry

How many molecules are present in 0.20 g of Hydrogen gas?

- A. [fraction — rendered as glyphs in the source]
- B. [fraction — rendered as glyphs in the source]
- C. [fraction — rendered as glyphs in the source]
- D. [fraction — rendered as glyphs in the source]

No answer is given for this question, and none is taught. UNRECOVERABLE —

xcluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 29 Physics

A generator produces 100 kW of power at a potential difference of 10 kV. The power is transmitted through cables of total resistance 5 Ω. How much power is dissipated in the cables?

- A. 50 W
- B. 750 W
- C. 500 W ✓ **Correct answer**
- D. 1000 W

Question 30 English

I keep the butter in the fridge. Select the correct passive voice:

- A. In the fridge the butter is kept by me.
- B. By me is the butter kept in the fridge.
- C. The butter is kept by me in the fridge. ✓ **Correct answer**
- D. Kept in the fridge by me is the butter.

Note: Note: Options (b) and (d) print "dept"/"Dept" (misprint for "kept"/"Kept"); filed as corrected.

Question 31 Biology

Appendix is vestigial in man but may play role in:

- A. Digestion
- B. Excretion
- C. Immunity ✓ **Correct answer**
- D. Movement

32 Physics

In the nuclear reaction

- A. A neutron
- B. A proton
- C. An electron
- D. An alpha particle

No answer is given for this question, and none is taught. DEFECTIVE-excluded — no answer asserted (decided by assistant under owner's 8 Nov 2026 delegation)

Question 33 Physics

A body of mass 'm' moves at constant speed 'v' for a distance 's' against a constant force 'F' what is the power required to sustain this motion?

- A. Fv ✓ **Correct answer**
- B. 1/2 mv2
- C. 1/2 Fs
- D. Fs/v

Note: Note: The text layer renders "F" as "H" and "v"/"s" as the same PUA glyph, and the 1/2 fractions as PUA glyph pairs; option (a) reads "Fv" (power = force x velocity).

Question 34 Biology

A single molecule of haemoglobin is composed of:

- A. Three polypeptide chains
- B. Four polypeptide chains ✓ **Correct answer**
- C. Five polypeptide chains
- D. Six polypeptide chains

35 Chemistry

Which of following functional groups are deactivating and not ortho, para directing?

- A. -R
- B. -COR ✓ **Correct answer**
- C. -NH2
- D. -NR2

Question 36 Chemistry

In which of the following pairs are both substances normally crystalline?

- A. Copper and diamond ✓ **Correct answer**
- B. Copper and glass
- C. Copper and rubber
- D. Diamond and glass

Question 37 Biology

Urea formation occurs in:

- A. Kidney
- B. Liver ✓ **Correct answer**
- C. Spleen
- D. Lungs

Question 38 Chemistry

Which one of the following is strongest acid?

- A. CH3COOH
- B. CH3CH2COOH
- C. C6H5CH2COOH
- D. FCH2COOH ✓ **Correct answer**

The stem prints "ecid" (misprint for "acid"); option (c) prints "C6 H5 CG 2 COOH" (the "H" renders as "G"); read as C6H5CH2COOH.

Question 39 Physics

Ultraviolet rays differ from the X-rays in that ultraviolet rays:

- A. Cannot be diffracted
- B. Cannot be polarized
- C. Have a low frequency ✓ **Correct answer**
- D. Do not affect a photographic plate

Question 40 English

'ALLUSION' means:

- A. An idea haunting one's mind
- B. A casual or indirect reference ✓ **Correct answer**
- C. Have a low frequency
- D. Do not affect a photographic plate

Note: Note: Options (c) and (d) repeat Q39's options; filed as printed.

Question 41 Biology

Phagocytosis, pinocytosis and autophagy are the functions of:

- A. Golgi-Apparatus
- B. Lysosomes ✓ **Correct answer**
- C. Peroxisomes
- D. Glyoxisomes

Question 42 Chemistry

To distinguish among primary, secondary and tertiary alcohols which of the following

- A. Benedicts reagent
- B. Tollen’s reagent
- C. Lucas test ✓ **Correct answer**
- D. None of the above

Question 43 Physics

A student measures a current as 0.5 A. Which of the following correctly expresses this result?

- A. 50 mA
- B. 50 MA
- C. 500 mA ✓ **Correct answer**
- D. 500 MA

Note: Note: The stem prints "A students measures a current as O.Sa." (the "0.5 A" renders as "O.Sa" in the text layer); read as 0.5 A.

Question 44 Biology

Spiders belong to class:

- A. Crustacean
- B. Myriapoda
- C. Arachnida ✓ **Correct answer**
- D. Hexapoda

Note: Note: Option (c) prints "Arychnida" (misprint for "Arachnida"); filed as corrected.

Question 45 Chemistry

Which one of the following; compounds participates in hydrogen bonding?

- A. CH3Cl

- C. CH3NH2 ✓ **Correct answer**
- D. C6H5OCH3

Note: Note: Option (a) prints "CHCI" (the "l" renders as "I"); read as CH3Cl. Option (c) prints "CH3NH3" (methylamine is CH3NH2) — corrected in the config. Filed option C read "CH3NH3" (misprint in the source reproduction); corrected to "CH3NH2" as documented in the reviewed file.

Question 46 Biology

[stem — rendered as glyphs in the source]

- A. [option — rendered as glyphs in the source]
- B. [option — rendered as glyphs in the source]
- C. [option — rendered as glyphs in the source]
- D. [option — rendered as glyphs in the source]

No answer is given for this question, and none is taught. UNRECOVERABLE — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 47 Biology

Polysaccharide cellulose is the building material of:

- A. Primary cell-wall ✓ **Correct answer**
- B. Secondary cell-wall
- C. Middle lamella
- D. Plasma membrane

Note: Note: The keyed answer is the primary cell wall (a).

Question 48 Chemistry

Which of the following structure has a bond formed by an overlap of SP2 hybrid orbital

SP hybrid orbital?

- A. HC≡CH
- B. H2C=CH2
- C. H2C=C=CH2 ✓ **Correct answer**
- D. CH2=CHCH3

Note: Note: The stem prints "overla" for "overlap"; option (a)'s bond is printed "=" but is the triple bond of acetylene.

Question 49 Physics

The first law of thermodynamics is a statement which implies that:

- A. No heat enters or leaves the system
- B. The temperature remains constant
- C. All work is mechanical
- D. Energy is conserved ✓ **Correct answer**

Question 50 English

GET HOLD OF ONESELF Implies:

- A. To start running
- B. To catch a thief
- C. To become calm ✓ **Correct answer**
- D. To feel exhausted

Question 51 Biology

Lobsters belong to class:

- A. Myriapoda
- B. Arachnida
- C. Hexapoda

statean ✓ Correct answer

Question 52 Chemistry

The bond angle between H - C – C bond in ethane is:

- A. 109.5 ✓ **Correct answer**
- B. 120
- C. 90
- D. 107.5

Question 53 Physics

the function of a mains transformer is to convert:

- A. one direct voltage to another direct voltage of different magnitude.
- B. one alternating voltage to another alternating voltage of different magnitude. ✓ **Correct answer**
- C. a high value alternating voltage to low value direct voltage.
- D. A high value alternating current to low value direct voltage.

Note: Note: The stem prints "main transformer" (for "mains transformer"); filed as corrected.

Question 54 Biology

Pigeon odour is released from the water bloom of:

- A. Slime mold
- B. Water mold
- C. Cyanobacteria ✓ **Correct answer**
- D. Cyanobacteria Algae ponds

Note: Note: The stem prints "Pigeon odour" (the odour associated with the water bloom); filed as printed.

55 Chemistry

What will be the product when PCl5 reacts with acetic acid?

- A. CH3Cl
- B. CH3COCl ✓ **Correct answer**
- C. CH3COCl2
- D. CH3CH2COCl

Note: Note: The stem prints "PCT" for PCl5; option (c) prints CH3COCl2 as printed (the product is CH3COCl, option (b)). The trailing "(" after options (a)-(c) in the text layer is a stray and is omitted.

Question 56 Physics

When monochromatic light of wavelength 5.0 × 10-7 m is incident normally on a plane diffraction grating, the second order diffraction lines are formed at angles of 30° to the normal to the grating. What is the number of lines per millimeter of the grating?

- A. 250
- B. 500 ✓ **Correct answer**
- C. 1000
- D. 4000

Question 57 Biology

Brunner’s glands are found in:

- A. Stomach
- B. Duodenum ✓ **Correct answer**
- C. Ileum
- D. Colon

58 Chemistry

Which type of isomerism is being exhibited by FCH = CHF?

- A. Chain isomerism
- B. Structural isomerism
- C. Geometrical isomerism ✓ **Correct answer**
- D. Position isomerism

Question 59 Physics

During the experiment one measured the mass of mosquito and found it 1.20 × 10-5 kg. the number of significant figures in this case is:

- A. [option — blank in the source]
- B. [option — blank in the source]
- C. [option — blank in the source]
- D. [option — blank in the source]

No answer is given for this question, and none is taught. UNRECOVERABLE — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 60 English

Select the correct sentence:

- A. My feet seemed hardly to touch the earth.
- B. My feet hardly seemed to touch the earth ✓ **Correct answer**
- C. Hardly my feet seemed to touch the earth.
- D. My feet seemed to touch the earth hardly.

Note: Note: Option (b) prints "seamed" (the sentence is "My feet hardly seemed to touch the earth") — corrected in the config. Filed option B read "My feet hardly seamed to touch the earth." (misprint in the source reproduction); corrected to "My feet hardly seemed to touch the earth" as documented in the reviewed file.

61 Biology

An organism that adopts saprophytic mode of nutrition during part of its life is called:

- A. Facultative saprophyte ✓ **Correct answer**
- B. Facultative parasite
- C. Obligate saprophyte
- D. Obligate parasite

Question 62 Chemistry

Which is the correct product formed when monohydric alcohol reacts with sodium metal?

- A. Alkene
- B. Sodium alkoxide ✓ **Correct answer**
- C. Alkane
- D. Ether

Note: Note: Option (b) prints "Sodum" (misprint for "Sodium"); filed as corrected.

Question 63 Physics

If a hole is bored through the center of the earth and a pebble is dropped in it, then it will:

- A. Stop at the center of the earth
- B. Drop to the other side
- C. Execute SHM ✓ **Correct answer**
- D. None of the above.

Note: Note: The stem prints "in ti" (for "in it") and option (c) prints "Lxecute" (misprint for "Execute"); filed as corrected.

64 Biology

Erepsin acts upon:

- A. Polypeptides
- B. Carbohydrates
- C. Dipeptides ✓ **Correct answer**
- D. Fats

Note: Note: Erepsin also acts on polypeptides; the keyed answer is dipeptides (c).

Question 65 Chemistry

Coal, Natural gas and petroleum are generally called:

- A. Node
- B. Anti-node
- C. Crest
- D. Trough

No answer is given for this question, and none is taught. DEFECTIVE-excluded — no answer asserted (decided by assistant under owner's 8 Nov 2026 delegation)

Question 66 Physics

in vibrating cord the point where the particles are stationary is called:

- A. node ✓ **Correct answer**
- B. anti-node
- C. crest
- D. trough

Question 67 Biology

Microsporum furfur causes:

ete's foot

- B. ring worm
- C. dandruff ✓ **Correct answer**

Note: Note: Only three options are printed ((d) is absent); the word "ergot" is attached to option (b) in the text layer.

Question 68 Chemistry

benzene reacts with acetyl chloride in the presence of lewis acid forming:

- A. Chlorobenzene
- B. Acetophenone ✓ **Correct answer**
- C. Benzoic acid
- D. Benzophenone

Note: Note: The options print "Chlorobazcre", "Acotophenone" and "Benzolc acid" (misprints for "Chlorobenzene", "Acetophenone" and "Benzoic acid"); filed as corrected.

Question 69 Physics

the minimum frequency of incident light required to emit photoelectrons from the metal surface is called:

- A. critical frequency
- B. threshold frequency ✓ **Correct answer**
- C. work function
- D. none of the above

Question 70 English

in a composition writing exercise, ‘PRECISE’ means:

- A. A synopsis for writing an essay in a degree level examination
- B. A critique highlighting the weak point of a feature film story

- sume of the commercial achievements spread over a year
- D. A short summary of the crucial ideas of a longer composition. ✓ **Correct answer**

Question 71 Biology

The gills are covered by operculum in

- A. Bony fishes ✓ **Correct answer**
- B. Cartilaginous fishes
- C. Lung fishes
- D. Jawless fishes

Question 72 Chemistry

When 2-Bromo-2-methyl propane undergoes unimolecular elimination reaction, the product obtained will be:

- A. 2-Methylpropane
- B. 2-Methylpropene ✓ **Correct answer**
- C. 2-Methyl-1-propanol
- D. 2-Pentanol

Note: Note: Option (b) prints "2-Methyl propane" (identical to (a)); the E1 elimination product is 2-methylpropene — corrected in the config. The trailing colons in the options are text-layer artefacts; omitted. Filed option B read "2-Methylpropane" (misprint in the source reproduction); corrected to "2-Methylpropene" as documented in the reviewed file.

Question 73 Physics

When lead, 214Pb, emits a β-particle, the resultant nucleus will be:

- A. 214Bi83 ✓ **Correct answer**
- B. 214Po84
- C. 213Pb82
- D. 214Tl81

PRINTED-KEY CORRECTION: the key prints C but 214Pb β-decay gives 214Bi (Z 82 -> 83) — the correct answer is (a). Option (d)'s atomic-number subscript renders as 41 in the text layer; thallium's atomic number is 81 — corrected in the config. Filed option D read "214Tl41" (misprint in the source reproduction); corrected to "214Tl81" as documented in the reviewed file.

Question 74 Biology

A sporophyte that depends on gametophytes is:

- A. Adiantum
- B. Pinus
- C. Marchantia ✓ **Correct answer**
- D. Mustard-plant

Note: Note: The stem prints "sporophyle" (misprint for "sporophyte") and option (a) prints "Adlantum" (misprint for "Adiantum"); filed as corrected.

Question 75 Chemistry

Which is not correct about polyvinyl chloride?

- A. It is used in large scale production of cable insulator
- B. It is a copolymer ✓ **Correct answer**
- C. It is a homopolymer
- D. It is used in the manufacturing of pipes

Question 76 Physics

If two cars are moving with velocity 10 m/s and 5m/s in opposite direction to each other, then their relative velocity with respect to one another will be:

- A. 5m/s
- B. 10m/s
- C. -5m/s

n/s ✓ **Correct answer**

Question 77 Biology

Replication progresses at a rate of about 50 base pairs per second in:

- A. Bacteria
- B. Virus
- C. Eukaryote ✓ **Correct answer**
- D. All of the above

Question 78 Chemistry

Vinyl acetate monomer is prepared by the reaction of acetaldehyde and acetic anhydride. The catalyst employed is:

- A. FeCl3 ✓ **Correct answer**
- B. Al2O3
- C. V2O5
- D. Cr2O3

Note: Note: The stem prints "Vinylaeetate", "lby" and "catalyt"; option (a) prints "FcCI" (read as FeCl3).

Question 79 Physics

When released from a height a ball falls 5m in 1s. in 4s after release it will fall.

- A. 40m
- B. 80m ✓ **Correct answer**
- C. 20m
- D. 100m

Note: Note: PRINTED-KEY CORRECTION: the key prints C (20 m) but a ball that falls 5 m in 1 s ($s = \frac{1}{2}gt^2$, $g = 10\ m/s^2$) falls $5 \times 4^2 = 80$ m in 4 s — the correct answer is (b).

80 English

"I saw him yesterday" she said. Select the correct indirect speech:

- A. She told that she had seen him yesterday.
- B. She said that she had seen him the day before. ✓ **Correct answer**
- C. She told that she could see him the previous day.
- D. She said that she would see him the day before.

Note: Note: PRINTED-KEY CORRECTION: the key prints C but "I saw him yesterday" becomes "she had seen him the day before" in indirect speech — "could see" is not the past of "saw"; the correct answer is (b).

Question 81 Biology

The pigments of chlorophyll a,b, and carotenoids are present in:

- A. Stroma
- B. Grana
- C. Thylakoid membrane
- D. Crista

No answer is given for this question, and none is taught. TWO CORRECT OPTIONS — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 82 Chemistry

Thermal processing of industrial waste material aims at:

- A. Burning of waste material in pits
- B. Converting the solid waste into useful products by thermal treatment.
- C. Energy recovery from organic matter prior to its final disposal ✓ **Correct answer**
- D. Size reduction and compaction by thermal process

83 Physics

If the momentum of a body decreases by 20% the percentage decrease in K.E will be:

- A. 44%
- B. 36% ✓ **Correct answer**
- C. 28%
- D. 20%

Question 84 Biology

Which one of the following animals is filter feeder?

- A. Teeth
- B. Sycon
- C. Fresh water mussel ✓ **Correct answer**
- D. Jelly fish

Note: Note: Option (c) prints "Fresh water muscle" (misprint for "Fresh water mussel" — the filter feeder); filed as corrected.

Question 85 Chemistry

Which one is not a nitrogenous fertilizer?

- A. Ammonium nitrate
- B. Triple phosphate ✓ **Correct answer**
- C. Urea
- D. Nitro phosphate

Question 86 Physics

The antimatter of electron is:

- A. Photon
- B. Roton

itron ✓ **Correct answer**

- D. Antineutrino

Question 87 Biology

In chlorophyll-b, the porphyrin ring is attached to the:

- A. Methyl group
- B. Carboxyl group
- C. Aldehyde group ✓ **Correct answer**
- D. Hydroxyl group

Note: Note: The stem prints "chlorophyII-b" and "porphyrine" (misprints for "chlorophyll-b" and "porphyrin"); option (d) prints "Hydroxyle" (for "Hydroxyl"); filed as corrected.

Question 88 Chemistry

Which of the following titrants would most likely be used as its own indicator in acid medium?

- A. K2Cr2O7
- B. Iodine
- C. KMnO4 ✓ **Correct answer**
- D. H2O2

Note: Note: The stem prints "ths'" for "its"; option (a)'s oxygen subscript renders as "3" in the text layer (read as 7 — K2Cr2O7); option (b) prints "Lodine" (read as Iodine).

Question 89 Physics

An organ pipe is open at both ends at its fundamental frequency. Neglecting any end effects, what wavelength is formed by this pipe in this mode of vibration, if the pipe is two meter long?

- A. 2m

✓ Correct answer

- C. 6m
- D. 8m

Question 90 English

Fire destroyed the top floor of the building:

- A. The top floor of the building got destroyed by fire
- B. By fire was destroyed the top floor of the building.
- C. Destroyed by fire was the top floor of the building.
- D. The top floor of the building was destroyed by fire. ✓ **Correct answer**

Question 91 Biology

Myoglobin is found in:

- A. Bone
- B. Connective tissue
- C. Muscles ✓ **Correct answer**
- D. Cartilage

Question 92 Chemistry

The atomic number of scandium is 21. What is its ground state electronic configuration?

- A. 1s2 2s2 2p6 3s2 3p6 3d3
- B. 1s2 2s2 2p6 3s2 3p6 3d3 4s1
- C. 1s2 2s2 2p6 3s2 3p6 3d3 4s2
- D. 1s2 2s2 2p6 3s2 3p6 3d3 4p1

No answer is given for this question, and none is taught. NO CORRECT OPTION — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

93 Physics

A body in equilibrium must not have:

- A. Kinetic energy
- B. Velocity
- C. Momentum
- D. Acceleration ✓ **Correct answer**

Question 94 Biology

The centre of porphrine ring of haemoglobin is occupied by:

- A. Magnesium
- B. Sodium
- C. Iron ✓ **Correct answer**
- D. Potassium

Note: Note: PRINTED-KEY CORRECTION: the key prints A (Magnesium — the chlorophyll answer) but the centre of the haemoglobin porphyrin ring is iron — the correct answer is (c).

Question 95 Chemistry

The differences in energy between different states of bond vibrations in a molecule correspond to which electromagnetic region?

- A. Microwave
- B. Infrared ✓ **Correct answer**
- C. Visible
- D. X-rays

Question 96 Physics

Three equivalcnt resistors connected in parallel have equivalent resistance R/3. When

nnected in series then the equivalent resistance is:

- A. 3R ✓ **Correct answer**
- B. R/3
- C. R
- D. 2R

Note: Note: PRINTED-KEY CORRECTION: the key prints B but three equal resistors R in series give 3R — the correct answer is (a).

Question 97 Biology

Thalassaemia major is also known as:

- A. Sickle cell anemia
- B. Cooley’s anemia ✓ **Correct answer**
- C. Microcytic anemia
- D. Nutritional anemia

Note: Note: Option (c) prints "Mycocystic" (misprint for "Microcytic"); filed as corrected.

Question 98 Chemistry

40.0 dm3 of an ideal gas at 25 °C and 750 mm Hg is expanded to 50.0 dm3. The pressure of the gas changed to 765 mm Hg. What is the temperature of the gas?

- A. [fraction — rendered as glyphs in the source]
- B. [fraction — rendered as glyphs in the source]
- C. [fraction — rendered as glyphs in the source]
- D. [fraction — rendered as glyphs in the source]

No answer is given for this question, and none is taught. UNRECOVERABLE — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

99 Physics

Ohm’s law is valid only for:

- A. Thermistor
- B. Bulb filament
- C. Metals ✓ **Correct answer**
- D. Semiconductors

Note: Note: Option (b) prints "Bulb lilament" (misprint for "Bulb filament") and option (d) prints "Serninonductots" (misprint for "Semiconductors"); filed as corrected.

Question 100 English

‘APPRAISE’ means:

- A. Tell a story at bed time
- B. Evaluate the quality of ✓ **Correct answer**
- C. Do shopping in a bazaar
- D. Praise a man out of place

Question 101 Biology

Premature death of plants is caused by the deficiency of:

- A. Magnesium
- B. Iron
- C. Phosphorus
- D. potassium ✓ **Correct answer**

Note: Note: The stem prints "paints" (misprint for "plants"); filed as corrected.

Question 102 Physics

Which of the given formulae would be used to calculate the wave length of an electron?

ocity(v), its mass (m) and constant h:

- A. [option — blank in the source]
- B. [option — blank in the source]
- C. [option — blank in the source]
- D. [option — blank in the source]

No answer is given for this question, and none is taught. UNRECOVERABLE — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 103 Physics

The energy stored in a charged capacitor is given by:

- A. [option — blank in the source]
- B. [option — blank in the source]
- C. [option — blank in the source]
- D. [option — blank in the source]

No answer is given for this question, and none is taught. UNRECOVERABLE — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 104 Biology

The birds excrete:

- A. Ammonia
- B. Urea
- C. Uric acid ✓ **Correct answer**
- D. Acetic acid

Question 105 Chemistry

Which electronic sub-shell do the Lanthanides have incompletely filled?

- A. 3f

Correct answer

- C. 5f
- D. 6f

Note: Note: The stem prints "Lanthanicies" (misprint for "Lanthanides"); filed as corrected.

Question 106 Physics

A wire has a resistance ‘R’. If its length is doubled and radius is reduced to half then its resistance will become:

- A. 2R
- B. 4R
- C. 8R ✓ **Correct answer**
- D. 16R

Note: Note: The stem prints "A write has a resilience ‘it’" (misprints for "A wire has a resistance ‘R’"); filed as corrected.

Question 107 Biology

Bulliform cells are present in:

- A. Grasses ✓ **Correct answer**
- B. Under ground stems
- C. Fruit-nuts
- D. Cabbage leaves

Question 108 Physics

How many different values can m_l assume in the electron sub-shell designated by quantum number n = 5, l = 4?

- A. 4
- B. 5

- D. 9 ✓ **Correct answer**

Note: Note: PRINTED-KEY CORRECTION: the key prints B but l = 4 gives 2l+1 = 9 values of m_l — the correct answer is (d). The stem prints "m," and "1=4" (the subscript l renders as a comma and "l" as "1"); read as m_l and l = 4.

Question 109 Physics

The potential difference between a pair of similar and parallel conducting plates is known. What additional information is needed in order to find the electric field strength between the plates?

- A. Separation of the plates. ✓ **Correct answer**
- B. Separation and area of the plates.
- C. Permittivity of the medium; separation of the plates.
- D. Permittivity of the medium; separation and area of the plates.

Question 110 English

Please help someone, the house is ____ fire.

- A. At
- B. In
- C. On ✓ **Correct answer**
- D. By

Note: Note: The stem prints "life" for "fire" (only "on" fits the preposition blank).

Question 111 Biology

Bone is surrounded by a membrane called:

- A. Perichondrium
- B. Prostomium

myclum

- D. Periosteum ✓ **Correct answer**

Note: Note: Option (d) prints "Perlostium" (misprint for "Periosteum" — the membrane around bone); filed as corrected. Option (c) prints "Perlmyclum" (apparent misprint for "Perimysium"); filed as printed.

Question 112 Chemistry

Which of the following is Hypochlorous acid?

- A. HClO ✓ **Correct answer**
- B. HClO2
- C. HClO3
- D. HClO4

Note: Note: The options print "HCIO" (the "l" renders as "I"); read as HClO etc.

Question 113 Physics

A capacitor which has a capacitance of 1 farad will:

- A. Be fully charged in 1 second by a current of 1 ampere
- B. Store 1 coulomb of charge at a potential difference of 1 volt.
- C. Gain 1 joule of energy when 1 coulomb of charge is stored on it.
- D. Discharge in 1 second when connected across a resistor of resistance 1 ohm. ✓ **Correct answer**

Note: Note: Option (d) prints "aoross" (misprint for "across"); filed as corrected.

Question 114 Biology

A hormone that prevents senescence in leaves, is:

- A. Auxin

- C. Cytokinin ✓ **Correct answer**
- D. Abscisic acid

Question 115 Chemistry

If 20.0 cm3 of 0.5 M solution is diluted to 1.0 dm3. What will be its new concentration?

- A. 0.00.1 M
- B. 0.01 M ✓ **Correct answer**
- C. 1.0 M
- D. 10.0 M

Note: Note: Option (a) prints "0.00.1 M" (a typo for 0.001 M); filed as printed.

Question 116 Physics

The internal energy of a fixed mass of an ideal gas depends on:

- A. Pressure, but not volume or temperature.
- B. Temperature, but not pressure or volume. ✓ **Correct answer**
- C. Volume, but not pressure or temperature.
- D. Pressure and temperature, but not volume.

Note: Note: PRINTED-KEY CORRECTION: the key prints D but the internal energy of an ideal gas depends on temperature ONLY — the correct answer is (b).

Question 117 Biology

Meissner’s corpuscles are the receptors for:

- A. Temperature
- B. Pain
- C. Pressure
- D. Touch ✓ **Correct answer**

The stem prints "Messer's capsules" (misprint for "Meissner's corpuscles"); filed as corrected.

Question 118 Chemistry

Which one of the following oxides exhibit amphoteric properties?

- A. K2 O
- B. MgO
- C. ZnO ✓ **Correct answer**
- D. CaO

Question 119 Physics

A spring obeying Hooke’s law has an unstretched length of 50 mm and a spring constant of 400 N/m. What is the tension in the spring when its overall length is 70 mm?

- A. 8.0 N ✓ **Correct answer**
- B. 28 N
- C. 160 N
- D. 400 N

Note: Note: PRINTED-KEY CORRECTION: the key prints B but F = kΔx = 400 x 0.020 = 8.0 N (k = 400 N/m confirmed by the span positions) — the correct answer is (a). The stem prints "Book’s law", "contant", "Nm -01" and "lenlngth" (misprints for "Hooke’s law", "constant", "N/m" and "length"); filed as corrected.

Question 120 English

‘CRANKY SPOUSE’ implies:

- A. A carefully selected loving partner of life
- B. Fussy and bad-tempered wife or husband ✓ **Correct answer**
- C. Money squandering younger second wife
- D. A device fitted behind the rear seat of a car.

The option labels print E-H, relabelled A-D by position.

Question 121 Biology

Florigen is produced by:

- A. Flowers
- B. Flower-buds
- C. Leaves ✓ **Correct answer**
- D. Fruits

Question 122 Chemistry

Which one of the following salts will produce an alkaline solution when dissolved in water?

- A. NH4Cl
- B. NaNO3
- C. Na2CO3 ✓ **Correct answer**
- D. Na2SO4

Note: Note: Option (a) prints "NH1Cl" (the subscript renders as 1; read as 4 — NH4Cl); options (b) and (d) print "Nu" (read as Na).

Question 123 Physics

Which thermodynamic temperature is equivalent to 501.85 0 C?

- A. 775.00 K ✓ **Correct answer**
- B. 774.85 K
- C. 228.85 K
- D. 228.70 K

Note: Note: PRINTED-KEY CORRECTION: the key prints B but 501.85 °C + 273.15 = 775.00 K — the correct answer is (a).

124 Biology

Who used puzzle boxes in experiment on animal learning?

- A. Pavlove
- B. E.L. Thorndike ✓ **Correct answer**
- C. Konrad Lorenz
- D. Kohler

Note: Note: Option (a) prints "Pavlove" (Pavlov); filed as printed.

Question 125 Chemistry

A neutral atom A has the electronic configuration: 1s 2 2s 2 2p 6 3s 2 3p 6 4s 1. It will gain or lose electron/s to form most probably an ion of valence:

- A. -2
- B. -1
- C. +2
- D. +1 ✓ **Correct answer**

Question 126 Chemistry

Which statement correctly describes a nucleon?

- A. A neutron or a proton ✓ **Correct answer**
- B. A neutron, proton or an electron
- C. Any atomic nucleus
- D. A radioactive atomic nucleus

Note: Note: PRINTED-KEY CORRECTION: the key prints C but a nucleon is a neutron or a proton, not "any atomic nucleus" — the correct answer is (a).

127 Chemistry

Ozone gas is:

- A. Greenish, tasteless and light
- B. Greenish blue, bitter in taste
- C. Blue. Poisonous and explosive ✓ **Correct answer**
- D. Purple yellow, non poisonous, non explosive

Question 128 Chemistry

Which one of the following is a lewis acid?

- A. (CH3)3 N
- B. PH3
- C. BF3 ✓ **Correct answer**
- D. O2

Question 129 Physics

An object travels at constant speed around a circle of radius 1.0 m in 1.0 s. what is the magnitude of its acceleration?

- A. Zero
- B. 1.0 ms-2
- C. 2π ms-2
- D. $4\pi^2$ ms-2 ✓ **Correct answer**

Note: Note: PRINTED-KEY CORRECTION: the key prints A (Zero) but an object moving in a circle at constant speed has centripetal acceleration v2/r = (2π)2/1 = $4\pi^2$ m/s2 — the correct answer is (d). The "n" in options (c) and (d) is π; option (c)'s exponent renders as "1" in the text layer (read as -2 by the pattern of (b) and (d)).

130 English

Select the correct sentence:

- A. Farid and Javed both are good swimmers.
- B. Both Farid and Javed are good swimmers. ✓ **Correct answer**
- C. Good swimmers are Farid and Javed both.
- D. Swimmers are good both Farid and Javed.

Note: Note: The options print "javed"/"faved" (the capital J renders as lowercase "j"/"f" in the text layer); read as Javed.

Question 131 Biology

Which one of the following animals is viviparous?

- A. Rat
- B. Kangaroo
- C. Duckbilled platypus
- D. Spiny ant eater

No answer is given for this question, and none is taught. TWO CORRECT OPTIONS — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 132 Chemistry

According to molecular orbital theory which one of the following will indicate two unpaired electrons?

- A. N2
- B. O2 ✓ **Correct answer**
- C. F2
- D. He2++

Note: Note: Option (d) is rendered "Hc +2" in the text layer; read as the He2 2+ ion.

133 Physics

An alternating current ‘1/A’ varies with time ‘t/s’ according to the equation I = s sin (100n t). What is the mean power developed by the current in a resistive load of resistance 100?

- A. 125 W
- B. 160 W
- C. 250 W
- D. 500 W

No answer is given for this question, and none is taught. DEFECTIVE-excluded — no answer asserted (decided by assistant under owner's 8 Nov 2026 delegation)

Question 134 Biology

Cristae of mitochondria are the sites of:

- A. Electron transport chains ✓ **Correct answer**
- B. Photophosphorylation
- C. Krebs cycle
- D. Glycolysis

Question 135 Chemistry

Which one of the following compounds will show covalent bonding?

- A. CaF2
- B. MgO
- C. KCl
- D. SiCl4 ✓ **Correct answer**

Note: Note: Option (c) prints "KCI" (read as KCl). Option (d) prints "Sill" with subscript "1" in the text layer; read as SiCl4 (the standard covalent option in this set) — corrected in the config. Filed option D read "Sill" (misprint in the source reproduction); corrected to "SiCl4"

Question 136 Physics

The rate of change of momentum of a body falling freely under gravity is equal to its:

- A. Impulse
- B. Kinetic energy
- C. Power
- D. weight ✓ **Correct answer**

Question 137 Biology

muscles develop from:

- A. ectoderm
- B. mesoderm ✓ **Correct answer**
- C. endoderm
- D. all of the above

Question 138 Chemistry

Which one of the following has a covalent bonding by the overlap of sp hybridized orbital with p orbital?

- A. BF3
- B. H2O
- C. BeCl2 ✓ **Correct answer**
- D. NH3

Note: Note: The options render as "BF1" and "HeCI1" in the text layer (B/H, l/I and 3/1 garbles); read as BF3 and BeCl2 — the sp-p overlap case — corrected in the config. The stem prints "hybralized" and "bitaly" (hybridized / orbital). Filed option A read "BF1" (misprint in the source reproduction); corrected to "BF3" as documented in the reviewed file. Filed option C read "HeCI1" (misprint in the source reproduction); corrected to "BeCl2"

Question 139 Physics

Radioactive activity is affected by:

- A. Temperature
- B. Pressure
- C. Humidity level
- D. None of the above ✓ **Correct answer**

Question 140 English

An ‘ELEGY’ is a poem written:

- A. In the memory of a little child
- B. On the sighting of an old tutor
- C. In the love of dear sweetheart
- D. On the death of someone dear ✓ **Correct answer**

Note: Note: The option labels print E-H; relabelled A-D by position.

Question 141 Biology

Bacteria maintain their survival by the formation of:

- A. Hormogonia
- B. Akinetes
- C. Endospores ✓ **Correct answer**
- D. Zygospores

Question 142 Chemistry

The change in enthalpy at constant pressure, H is equal to:

- A. $\Delta H = q + P\Delta V$

- C. H = E + PV ✓ **Correct answer**
- D. H = q − PV

Note: Note: The options' delta symbols render as "△" in the text layer; read as Δ. Option (b) prints "△ △ H = E- P △ V" (read as ΔH = ΔE − PΔV).

Question 143 Physics

Four gas molecules have the speed 8.0 ms-1, 6.0 ms-1, √8 ms-1 and 6.0 ms-1. What is their root-mean-square speed?

- A. 8.0 ms-1
- B. 6.0 ms-1 ✓ **Correct answer**
- C. 5.0 ms-1
- D. 7.0 ms-1

Note: Note: The fourth speed prints as "√ß" in the text layer; read as √8 (the rms then equals 6.0, matching the key).

Question 144 Biology

Avery, Macleod and McCarty repeated the Griffith experiment in the year:

- A. 1869
- B. 1928
- C. 1944 ✓ **Correct answer**
- D. 1952

Question 145 Chemistry

Considering the standard reduction chart, the strong reducing agent value is:

- A. Small negative values
- B. Large negative values ✓ **Correct answer**

- D. Large positive values

Question 146 Physics

An organ pipe of length l has one end closed but the other end open. What is the wavelength of the fundamental note emitted?

- A. Slightly smaller than 4l.
- B. Slightly larger than 4l. ✓ **Correct answer**
- C. Roughly equal to 3l/2.
- D. Slightly larger than 2l.

Note: Note: The stem prints "T" for the pipe length l and "node" for "note"; the options print "41"/"21"/"3:/2" (the letter l renders as "1" or ":"); read as 4l, 2l, 3l/2.

Question 147 Biology

Microvillae are also called:

- A. Leaf veins
- B. Cristae
- C. Capillaries
- D. Leaf midribs

No answer is given for this question, and none is taught. NO CORRECT OPTION — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 148 Chemistry

Which statement is correct while recharging the automobile battery?

- A. Pb is converted to PbO2.
- B. PbSO4 is converted to Pb. ✓ **Correct answer**
- C. Pb is converted to PbSO4.

ne of the above

Note: Note: Option (b) prints "PbSO is converted t Ph" and option (c) prints "PbSO" (the subscript 4 is lost in the text layer); read as PbSO4. The stem prints "recbarging" for "recharging".

Question 149 Physics

A vertical steel wire X of circular cross-section is used to suspend a load. A second wire Y, made of the same material but having twice the length and twice the diameter is used to suspend an equal load. What is the value of the ratio (extension of wire X)/(extension of wire Y)?

- A. 1/1
- B. 1
- C. 2 ✓ **Correct answer**
- D. 4

Note: Note: PRINTED-KEY CORRECTION: the key prints B but e_X/e_Y = 2 (Y has 2L and 4A, so e_Y = e_X/2) — the correct answer is (c). The ratio phrase is rendered in the cipher font in the text layer; decoded as "(extension of wire X)/(extension of wire Y)".

Question 150 English

My children don’t approve….. my smoking.

- A. I
- B. Of ✓ **Correct answer**
- C. On
- D. at

Question 151 Biology

cell death due to tissue damage is called:

- B. Apoptosis
- C. Necrosis ✓ **Correct answer**
- D. Metastasis

Question 152 Chemistry

You are required to test the presence of NH4+ Ion in water. Which of the following reagent will solve your problem?

- A. Imethylglyoxime
- B. Tollen’s reagent
- C. Nessler’s reagent ✓ **Correct answer**
- D. Magneson reagent

Note: Note: PRINTED-KEY CORRECTION: the key prints D (Magneson — the magnesium test) but the ammonium ion is tested with Nessler’s reagent; the correct answer is (c).

Question 153 Physics

Drops X and Y, of the same oil, remained stationary in air in the same electric field. After the field was switched off, X fell more quickly than Y. which deduction can be made?

- A. X had a greater charge than Y
- B. Y has a greater charge than X
- C. Parallel but opposite
- D. Parallel, opposite and folded spirally.

No answer is given for this question, and none is taught. DEFECTIVE-excluded — no answer asserted (decided by assistant under owner's 8 Nov 2026 delegation)

Question 154 Biology

The two chains of DNA occur side by side in a:

- B. Parallel but straight
- C. Parallel but opposite
- D. Parallel, opposite and folded spirally

No answer is given for this question, and none is taught. TWO CORRECT OPTIONS — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 155 Chemistry

Which of the following furnaces is used for the production of wrought iron?

- A. Open hearth furnace
- B. Reverberatory furnace ✓ **Correct answer**
- C. Bessemer converter
- D. Blast furnace

Question 156 Physics

A mass accelerates uniformly when the resultant force acting on it:

- A. Is zero.
- B. Is constant but not zero. ✓ **Correct answer**
- C. Increases uniformly with respect to time.
- D. Is proportional to the displacement of the mass from a fixed point.

Note: Note: PRINTED-KEY CORRECTION: the key prints C but uniform acceleration (F = ma, a constant) requires a constant resultant force — a force increasing uniformly would give increasing acceleration; the correct answer is (b).

Question 157 Biology

In which of the following the phenotypic and genotypic ratio is the same?

- A. Co-dominance

- C. Epistasis
- D. Incomplete dominance

No answer is given for this question, and none is taught. TWO CORRECT OPTIONS — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 158 Chemistry

The variable oxidation states of transition elements is attributed to the involvement of s as well as:

- A. Unpaired d Electrons ✓ **Correct answer**
- B. Unpaired p electrons
- C. Unpaired f electrons
- D. Paired up d electrons

Note: Note: PRINTED-KEY CORRECTION: the key prints B but variable oxidation states come from s + unpaired d electrons — the correct answer is (a).

Question 159 Chemistry

A sample of carbon-12 has a mass of 3.0 g. which expression gives the number of atoms in the sample? (N_A is the symbol for the Avogadro constant)

- A. 0.0030 N_A
- B. 0.25 N_A ✓ **Correct answer**
- C. 3.0 N_A
- D. 4.0 N_A

Note: Note: The stem prints "(N is the symbol Ion the Avogadro costant A" (garbled); read as "(N_A is the symbol for the Avogadro constant)". The options' Avogadro subscripts render as "A" in the text layer; read as N_A.

160 English

‘BREAK THE ICE’ Implies:

- A. Walk on ice-sheet
- B. Swallow ice-cubes
- C. Chisel an ice-block
- D. To make a beginning. ✓ **Correct answer**

Note: Note: Option (a) prints "ice-heet" (misprint for "ice-sheet"); filed as corrected.

Question 161 Biology

A cell-wall that is composed of sugar and amino acids is called:

- A. Murein ✓ **Correct answer**
- B. Chitin
- C. Lignin
- D. Pectin

Question 162 Chemistry

In contact process for the manufacture of sulphuric acid, sulphur trioxide is dissolved in sulphuric acid in form oleum. Oleum molecular formula is:

- A. $H_2S_2O_3$
- B. $H_2S_2O_5$
- C. $H_2S_2O_6$
- D. $H_2S_2O_7$ ✓ **Correct answer**

Question 163 Physics

Which of the following lists contains three regions of the electromagnetic spectrum in order of increasing frequency?

- A. Gamma rays, ultraviolet rays, radio waves.

- nma rays, visible radiation, ultraviolet rays.
- C. Microwaves, ultraviolet rays, X-rays. ✓ **Correct answer**
- D. Radio waves, visible radiation, infrared radiation.

Note: Note: The stem prints "in ceasing" (for "increasing") and option (c) prints "rayst" (for "rays"); filed as corrected.

Question 164 Biology

A plant or animal modified by genetic engineering is called:

- A. Transgenic ✓ **Correct answer**
- B. Probe
- C. Recombinant
- D. Plasmid

Question 165 Chemistry

Ethylene diamine tetraacetate ion (EDTA) is a polydentate ligand; it bonds to the central metal atom through:

- A. Two of its atoms
- B. Three of its atoms
- C. Four of its atoms
- D. Six of its atoms ✓ **Correct answer**

Note: Note: The stem is truncated in the text layer ("tetraacette ion (EDT") and its continuation ("is a polydentate ligand it bonds to central metal atom through:") is merged into option (a); filed as reconstructed. Option (c) prints "aloms" (misprint for "atoms").

Question 166 Physics

A source contains initially N0 nuclei of a radioactive nuclide. How many of these nuclei have decayed after a time interval of three half-lives?

- B. 2N /3
- C. N /3
- D. 7N /8 ✓ **Correct answer**

Note: Note: PRINTED-KEY CORRECTION: the key prints A (N/8 — the number REMAINING after three half-lives) but the question asks how many have DECAYED: N0 − N0/8 = 7N0/8 — the correct answer is (d).

Question 167 Biology

When the entire body of a bacterium is covered by flagella, such a bacterium is called:

- A. Atrichous
- B. Lophotrichous
- C. Lampi trichous
- D. Peritrichous ✓ **Correct answer**

Note: Note: Options (b) and (d) print "Lopho-trichous" and "Peri-trichaus" (misprints for "Lophotrichous" and "Peritrichous"); filed as corrected. Option (c) prints "Lampi trichous" (apparent garble; the flagellation set is atrichous / lophotrichous / amphitrichous / peritrichous); filed as printed.

Question 168 Chemistry

Phosphorus trihalides are readily hydrolysed as shown below: PX3 + 3H2O -> H3PO3 + 3HX Generally moving from fluorine to iodine rate of hydrolysis:

- A. Increases ✓ **Correct answer**
- B. Decreases
- C. Remains unchanged
- D. First increases and then decreases

169 Physics

Two monochromatic radiations X and Y are incident normally on a diffraction grating. The second order intensity maximum for X coincides with the third order intensity maximum for Y. What is the ratio (wavelength of X)/(wavelength of Y)?

- A. 1/2
- B. 2/3
- C. 3/2 ✓ **Correct answer**
- D. 2/1

Note: Note: PRINTED-KEY CORRECTION: the key prints B but 2λ_X = 3λ_Y gives λ_X/λ_Y = 3/2 — the correct answer is (c). The ratio phrase is rendered in the cipher font in the text layer; decoded as "(wavelength of X)/(wavelength of Y)".

Question 170 English

Select the correct sentence:

- A. Certainly she is the best person for the job.
- B. She is the best person for the job certainly.
- C. She is certainly the best person for the job. ✓ **Correct answer**
- D. The best person certainly she is for the job.

Question 171 Biology

Nucleus was discovered by:

- A. Waldyne
- B. T.H. Morgan
- C. Robert Brown ✓ **Correct answer**
- D. Kohler

Note: Note: Options (b) and (c) print "T.H. Margan" and "Robert Brawn" (misprints for "T.H. Morgan" and "Robert Brown"); filed as corrected.

172 Chemistry

Which of the following is not a nucleophile?

- A. NH3
- B. OH-
- C. HC = CH
- D. Br2 ✓ **Correct answer**

Note: Note: Options (a) and (b) print "NH" and "HO" (the subscripts/charges are lost in the text layer); read as NH3 and OH- (both nucleophiles; Br2 is the electrophile).

Question 173 Physics

A sound wave of frequency 400 Hz is travelling in a gas at a speed of 320 ms-1. What is the phase difference between two points 0.2 m apart in the direction of the travel?

- A. [fraction — rendered as glyphs in the source]
- B. [fraction — rendered as glyphs in the source]
- C. [fraction — rendered as glyphs in the source]
- D. [fraction — rendered as glyphs in the source]

No answer is given for this question, and none is taught. UNRECOVERABLE — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 174 Biology

Stroma of chloroplasts carries the fixation of:

- A. N2
- B. O2
- C. CO2 ✓ **Correct answer**
- D. NH3

175 Chemistry

Half-cell reaction standard reduction potential, E°: Fe2+ + 2e- -> Fe, Cu2+ + 2e- -> Cu, Ni2+ + 2e- -> Ni, Zn2+ + 2e- -> Zn (all E° values render as -0.41 in the text layer). Referring to the table above, which metal could be used to prevent iron from corrosion?

- A. Cu only
- B. Zn only ✓ **Correct answer**
- C. Cu & Ni only
- D. Ni and Zn only

Note: Note: The table's E° values all render as -0.41 in the text layer; filed as printed. The keyed answer is (b) Zn only (sacrificial protection).

Question 176 Physics

Which of the following is the unit of pressure?

- A. Kg m s-1
- B. Kg m-1 s-2 ✓ **Correct answer**
- C. Kg m2 s-2
- D. Kg m-2 s-1

Question 177 Biology

What will be the anti-codon of AUG?

- A. TAC
- B. ATC
- C. UAC ✓ **Correct answer**
- D. UTC

Question 178 Chemistry

Lipids are naturally occurring substances which are chemically:

- B. Amino acids
- C. Carbohydrates
- D. Esters ✓ **Correct answer**

Question 179 Physics

Satellites revolve around the earth in a circular orbit. What is the relationship between the radius of their orbits and their speeds?

- A. $v \propto r^2$
- B. $v \propto r$
- C. $v \propto 1/r$
- D. $v \propto 1/r^2$

No answer is given for this question, and none is taught. NO CORRECT OPTION — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 180 English

'DENOUNCE' means:

- A. To reject straight away
- B. To praise in a meeting
- C. To condemn publicly ✓ **Correct answer**
- D. To negotiate secretly

Question 181 Biology

Potato plastids, which store starch, are known as:

- A. Paramylum
- B. Amyloplasts ✓ **Correct answer**
- C. Leucoplasts
- D. glycoplasts

182 Chemistry

A salt AB ionizes as AB ⇌ A+ + B-. The solubility product for the salt AB is 4.0 x 10-4. The molar solubility of the salt is:

- A. 4.0 x 10 -4 M
- B. 2.0 x 10 -2 M ✓ **Correct answer**
- C. 8.0 x 10 -4 M
- D. 2.0 x 10 -4 M

Note: Note: The stem prints "tonizes" (misprint for "ionizes") and "AB = A+ > B-" (the equilibrium arrow renders as "=" and "+"); read as AB ⇌ A+ + B-.

Question 183 Physics

Of the following properties of a wave, the one that is independent of the others is its:

- A. Amplitude
- B. Wavelength
- C. Speed
- D. Frequency ✓ **Correct answer**

Question 184 Biology

The primers used in polymerase chain reaction has a sequence of bases:

- A. 8
- B. 12
- C. 16
- D. 20 ✓ **Correct answer**

Question 185 Physics

Which has the lowest temperature?

- A. Troposphere

- C. Mesosphere ✓ **Correct answer**
- D. Thermosphere

Question 186 Physics

The prefix 'tera' stands for:

- A. 10+4
- B. 10+4
- C. 10+4
- D. 10+12 ✓ **Correct answer**

Note: Note: Options (a), (b) and (c) all print 10+4 (triplication as printed); option (d) prints 10+12. The stem prints "prelix" for "prefix".

Question 187 Biology

The phenomenon that a seed fails to germinate in spite of providing all conditions necessary for germination, is called:

- A. Photoperiodism
- B. Vernalization
- C. Dormancy ✓ **Correct answer**
- D. phytochrome

Note: Note: PRINTED-KEY CORRECTION: the key prints B but a seed failing to germinate despite suitable conditions is dormancy, not vernalization — the correct answer is (c).

Question 188 Chemistry

Which one is least reactive towards a reaction with Na?

- A. CH3-OH
- B. CH3-CH3

- D. CH3-COOH

No answer is given for this question, and none is taught. TWO CORRECT OPTIONS — DEFECTIVE-excluded (decided by assistant under owner's 8 Nov 2026 delegation)

Question 189 Physics

The force 'F' on a charged particle 'q' moving with velocity 'v' parallel to magnetic field 'B' is given by:

- A. F = qvB
- B. F = qE
- C. F = 0 ✓ **Correct answer**

Note: Note: Option (d) is blank in the source; the "=" sign renders as "u" and the "0" of option (c) as "O" in the text layer. The stem prints "partied" and "held" (particle / field).

Question 190 English

The police arrested him for dangerous driving. Select the correct passive voice:

- A. He was arrested for dangerous driving by the police.
- B. He was arrested by the police for dangerous driving. ✓ **Correct answer**
- C. For dangerous driving he was arrested by the police.
- D. By the police was he arrested for dangerous driving.

Question 191 Biology

Which one of the following is a sex-linked inheritance?

- A. Baldness ✓ **Correct answer**
- B. Albinism
- C. Eye colour
- D. Myopia

PRINTED-KEY CORRECTION: the key prints C but eye colour is autosomal, not sex-linked — male-pattern baldness is the sex-linked trait in this set; the correct answer is (a).

Question 192 Chemistry

The element which has the smallest atomic radius is:

- A. Fe
- B. Co
- C. Ni ✓ **Correct answer**
- D. Cu

Question 193 Physics

Which one of the following has negative temperature coefficient?

- A. Copper
- B. Thermistor ✓ **Correct answer**
- C. Soft iron
- D. platinum

Question 194 Biology

pulvinus tissues are present at:

- A. Leaf-tip
- B. Leaf-margin
- C. Leaf-base ✓ **Correct answer**
- D. Middle-vein

Question 195 Chemistry

Which isomers have difference in both their physical and chemical properties?

in isomers

- B. Position isomers
- C. Functional group isomers ✓ **Correct answer**
- D. Both (A) and (B)

Question 196 Physics

When the light from two lamps falls on a screen, no interference pattern can be obtained. Why is this?

- A. The lamps are not point sources
- B. The lamps emit light of different amplitudes
- C. The light from the lamps is not coherent ✓ **Correct answer**
- D. The light from the lamps is white.

Question 197 Biology

The valve between left ventricle [and left atrium] is called:

- A. Semi lunar valve
- B. Bicuspid valve ✓ **Correct answer**
- C. Tricuspid valve
- D. Pulmonary valve

Note: Note: The stem is truncated in the source ("The valve between left ventricle is called:"); the missing "[and left atrium]" is supplied in brackets. Option (b) prints "Blcuspid" (Bicuspid).

Question 198 Chemistry

Which of the following tests can be used to distinguish between aldehydes and ketones?

- A. Baeyer’s test
- B. Fehling’s test
- C. Silver mirror test

h (B) and (C) ✓ Correct answer

Question 199 Physics

One way of expressing the equation of state for an ideal gas is by the equation pV = NkT. What do ‘N’ and ‘k’ represent respectively?

- A. Avogadro constant; Boltzmann constant
- B. Avogadro constant; Molar gas constant
- C. Total number of molecules; Boltzmann constant ✓ **Correct answer**
- D. Total number of molecules; Avogadro constant

Note: Note: The option labels print C-F; relabelled A-D by position. Option (a) prints "Boltzmnn" (Boltzmann).

Question 200 English

“I have been to Spain,” he told me. Select the correct indirect speech:

- A. He told me that he could visit Spain.
- B. He told me that he has visited Spain.
- C. He told me that he had been to Spain. ✓ **Correct answer**
- D. He told me that he has been to Spain.

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