Assistant Lineman (ALM), National Transmission & Despatch Company (NTDC) — 2021 · Solved Past Paper

Body: National Testing Service (NTS) · **Post:** Assistant Lineman (ALM), National Transmission & Despatch Company (NTDC) · **Year:** 2021 · **Questions:** 53 in the original paper — **52 solved and verified**, 1 excluded as defective (Q46) · **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 2021 sitting.

Source note: TestPointPK solved past paper: NTS NTDC ALM Past Paper dated 10-10-2021 (6 paginated pages carry questions, 10 per page except page 6 with 3; page 7 serves no questions). Stems, four or five options and the site-marked key per question as captured from the page HTML (correct option carries class=correct), 14 Nov 2026. The source states no printed total; filed as the complete paper as presented (53/53). 3 site-key corrections: Q23 b→D (2 mA is only a tingle; coma needs 50-100 mA, 100 mA minimum for ventricular fibrillation — TestPointPK's own standalone explanation + IOP + LibreTexts); Q43 c→B (uniform field: field strength same at all points; potential varies); Q52 c→B (5-2r>1 gives r<2). 1 DEFECTIVE-excluded: Q46 (correct current 0.30 A not among the options; site key A 0.36 A underivable from the printed numbers; no explanation on the standalone page). 0 PICK-ONE. Best-fit disclosed: Q9 B Energy/Heat, Q12 B shock safety, Q14 B thick conductors, Q19 A providing oxygen, Q26 A fuse below allowable current (site explanation + Urdu line), Q37 B third-law statement. 28 questions carry a Urdu line; 2 questions have five options as printed (Q21, Q53). Q7/Q27 same stem as printed, both filed. Dedup 14 Nov 2026: CLEAN — live index 906 papers, no nts-alm-ntdc-2021-10-10 paper_id; only

ALM papers live are 37bfi (28-07-2024, 79/79) and 37bfk (04-08-2024, 35/37), different sittings; overlap screen vs local parses of all recently deployed NTS papers: 16 exact stems, all shared generic electrical-trade bank items (11 vs ALM 28-07-2024, 5 vs ALM 04-08-2024), 1 fuzzy 0.93, 37 of 53 stems unique. Letter 37bga verified free at build time (no 37bga in toolkit configs; no 37bga file in the knowledge directory; no papers-deploy-37bga dir; no 37bga mention in batch records; 37bf* range exhausted and 37bg is a different older code, the PPSC Asst Director paper of 8 Nov 2026, so 37bga is the next code in sequence after 37bfz).

Question 1 Electrical

.A _____ is a semiconductor component that can either be used as switch or an amplifier

_____ ایک سیمی کنڈکٹر جزو ہے جسے یا تو سوئچ یا ایمپلیفائر کے طور پر استعمال کیا جا سکتا ہے۔

- A. Three pine shoe
- B. Transistor ✓ **Correct answer**
- C. Reflector
- D. Dipole

A. Wrong: not a semiconductor component (a garbled distractor).

B. Correct: a transistor is a semiconductor device used as a switch or an amplifier.

C. Wrong: a reflector reflects light or signals; it is not a semiconductor switch or amplifier.

D. Wrong: a dipole is an antenna type, not a semiconductor switch or amplifier.

Question 2 Mathematics

If the sum of two angles is 180°, they are called?

- A. Right angle
- B. Reflex angle
- C. Complementary angle

plementary angle ✓ **Correct answer**

A. Wrong: a right angle is 90 degrees, not a pair summing to 180 degrees.

B. Wrong: a reflex angle is greater than 180 degrees and less than 360 degrees.

C. Wrong: complementary angles sum to 90 degrees.

D. Correct: two angles whose sum is 180 degrees are supplementary angles.

Question 3 Electrical

is the unit of measurement for the potential difference that cause a current to flow _____ through a conductor. برقی رو پیدا کرنے والے برقی دباؤ کی اکائی کیا ہے؟

- A. Ampere
- B. Volt ✓ **Correct answer**
- C. Ohm
- D. Watt

A. Wrong: the ampere is the unit of electric current.

B. Correct: the volt is the unit of potential difference.

C. Wrong: the ohm is the unit of resistance.

D. Wrong: the watt is the unit of power.

Question 4 Physics

The acceleration of body due to the constant velocity is : مسلسل رفتار کی وجہ سے جسم کی سرعت ہے

- A. Positive
- B. Zero ✓ **Correct answer**
- C. Negative

A. Wrong: a positive acceleration would mean the body is speeding up.

B. Correct: constant velocity means no change of velocity, so the acceleration is zero.

C. Wrong: a negative acceleration would mean the body is slowing down.

D. Wrong: option B is correct.

Question 5 Electrical

انڈکٹنس کی پیمائش کی اکائی کیا ہے؟ ?What is the unit of measurement of Inductance

- A. Henry ✓ **Correct answer**
- B. Watt
- C. Light
- D. Tesla

A. Correct: the henry is the SI unit of inductance.

B. Wrong: the watt is the unit of power.

C. Wrong: light is not a unit of measurement.

D. Wrong: the tesla is the unit of magnetic flux density.

Question 6 Electrical

شارٹ سرکٹس پر اوہم میٹر کو کبھی نہ جوڑیں۔ . Never connect Ohm's meter on ___ circuits

- A. Open
- B. Short
- C. Live ✓ **Correct answer**
- D. Inductive

An ohmmeter measures resistance in a de-energised circuit; an open circuit simply reads infinite resistance.

B. Wrong: a short circuit reads near-zero resistance; the prohibition is about live circuits, not shorts.

C. Correct: an ohmmeter carries its own internal source, so connecting it to a live circuit gives a false reading and can damage the meter.

D. Wrong: an inductive circuit can be measured once it is de-energised; the prohibition is about live circuits.

Question 7 Electrical

The process of converting an alternating current waveform into a direct current

ایک متبادل کرنٹ ویوفارم کو ڈائریکٹ کرنٹ ویوفارم میں تبدیل کرنے کے ____? waveform is referred to as

عمل کو ____ کہا جاتا ہے؟

- A. Thermostat
- B. Rectification ✓ **Correct answer**
- C. Resonance
- D. Amplification

A. Wrong: a thermostat is a temperature-control device.

B. Correct: rectification is the conversion of alternating current into direct current.

C. Wrong: resonance is a frequency phenomenon, not AC-to-DC conversion.

D. Wrong: amplification increases signal strength; it does not convert AC to DC.

Question 8 Electrical

Which of the following is a type of transistor ?

- B. FAJET
- C. TRICAT
- D. BJT ✓ **Correct answer**

A. Wrong: DET is not a type of transistor.

B. Wrong: FAJET is not a type of transistor.

C. Wrong: TRICAT is not a type of transistor.

D. Correct: BJT (Bipolar Junction Transistor) is a type of transistor.

Question 9 Physics

جول کس کی اکائی ہے؟ ?_____ Joule is the unit of

- A. Joule
- B. Energy/Heat ✓ **Correct answer**
- C. Work
- D. None of these

A. Wrong: joule is the unit itself, not the quantity it measures.

B. Correct: the joule is the SI unit of energy, and heat is a form of energy (the bank answer).

C. Wrong: work is also measured in joules, but the bank answer for this question is Energy/Heat; see the best-fit note in the Verification Summary.

D. Wrong: option B is correct.

Question 10 Electrical

لائٹ ایمیٹنگ ڈائیوڈ ایک ___ سیمی کنڈکٹر . Light Emitting Diode (LED) is a ___ semiconductor device

- A. 3 lead
- B. 4 lead
- C. 7 lead
- D. 2 lead ✓ **Correct answer**

A. Wrong: a three-lead device is a transistor, not an LED.

B. Wrong: an LED does not have four leads.

C. Wrong: an LED does not have seven leads.

D. Correct: a light emitting diode has two leads, anode and cathode.

Question 11 Electrical

Always select _____ range of the current meter while measuring current of unknown wire. نامعلوم تار کے کرنٹ کی پیمائش کرتے وقت ہمیشہ موجودہ میٹر کی _____ رینج منتخب کریں۔

- A. Average
- B. Minimum
- C. Maximum ✓ **Correct answer**
- D. None of these

A. Wrong: there is no 'average range' selection rule for a current meter.

B. Wrong: starting on the minimum range risks overloading and damaging the meter with an unknown current.

C. Correct: always start on the maximum range for an unknown current, then step down; that protects the meter.

D. Wrong: option C is correct.

12 Electrical

A residual-current device (RCD) is widely used in electrical circuits? ایک بقایا کرنٹ ڈیوائس (آر سی ڈی) بڑے پیمانے پر برقی سرکٹس میں کس لیے استعمال ہوتی ہے؟

- A. For voltage regulation
- B. For shock safety ✓ **Correct answer**
- C. For leakage current detection
- D. For circuit breaker

A. Wrong: voltage regulation is the job of a voltage regulator, not an RCD.

B. Correct: an RCD trips on leakage current to protect people from electric shock; that is its purpose.

C. Wrong: leakage-current detection is the mechanism the RCD uses; its purpose, the bank answer, is shock safety.

D. Wrong: an RCD is not a circuit breaker (an RCBO combines the two functions).

Question 13 Electrical

In electrical cables AWG stands for _____? الیکٹریکل کیبلز میں اے ڈبلیو جی کا مطلب کیا ہے؟

- A. American Wires Group
- B. Anti Wind Gird
- C. American Wire Gauge ✓ **Correct answer**
- D. American Wide Gears

A. Wrong: American Wires Group is not what AWG stands for.

B. Wrong: Anti Wind Gird is not what AWG stands for.

C. Correct: AWG stands for American Wire Gauge.

D. Wrong: American Wide Gears is not what AWG stands for.

14 Electrical

برقی سرکٹس میں تیز رفتار بہاؤ کے لیے ?_____ For high current flow in electrical circuits one needs

کی ضرورت ہے؟ _____

- A. Silver
- B. Thick conductors ✓ **Correct answer**
- C. Good conductor
- D. Copper

A. Wrong: silver is a good conductor, but a thin silver wire still cannot carry a high current; the cross-section matters.

B. Correct: thick conductors (large cross-section) are needed for high current flow; a good conductor alone is not enough.

C. Wrong: a good conductor alone is not enough — the cross-section must be large.

D. Wrong: copper is a good conductor, but a thin copper wire still cannot carry a high current.

Question 15 Electrical

may be used to reduce current flow, and, at the same time, may act to lower voltage _____

کا استعمال کرنٹ کے بہاؤ کو کم کرنے کے لیے کیا جا سکتا ہے، اور اسی وقت، سرکٹس کے .levels within circuits

اندر وولٹیج کی سطح کو کم کرنے کے لیے کام کر سکتا ہے۔ _____

- A. Diodes
- B. Transistors
- C. Transformers
- D. Resistors ✓ **Correct answer**

A. Wrong: a diode conducts in one direction; it does not reduce current and voltage levels.

transistor switches or amplifies; it is not the device for this job.

C. Wrong: a transformer changes AC voltage levels; it does not reduce current and drop voltage in this way.

D. Correct: resistors reduce current flow and drop voltage within a circuit.

Question 16 Electrical

Materials that block flow of electrons are called_____ ? الیکٹران کے بہاؤ کو روکنے والے مواد کو کیا کہا جاتا ہے؟

- A. Insulators ✓ **Correct answer**
- B. Super conductors
- C. Conductors
- D. Semi conductors

A. Correct: insulators block the flow of electrons.

B. Wrong: a superconductor has zero resistance below its critical temperature; it does not block electrons.

C. Wrong: conductors allow electrons to flow easily.

D. Wrong: semiconductors conduct partially; they do not block electron flow.

Question 17 Electrical

In the electrical companies there must be fire safety to avoid danger, commonly used equipment is_____ ? برقی کمپنیوں میں خطرے سے بچنے کے لیے فائر سیفٹی کا ہونا ضروری ہے، عام طور پر استعمال ہونے والا سامان _____ ہے؟

- A. Mud/ soil
- B. Air blower

extinguisher ✓ **Correct answer**

- D. Water tank

A. Wrong: mud or soil is not fire-safety equipment.

B. Wrong: an air blower feeds air to a fire and makes it worse.

C. Correct: a fire extinguisher is the standard fire-safety equipment in electrical installations.

D. Wrong: a water tank is not the equipment used; water must not be used on electrical fires.

Question 18 Electrical

Which one of the following is not a factor affecting the resistance of a material? مندرجہ ذیل

میں سے کون سا عنصر کسی مادے کی مزاحمت کو متاثر نہیں کرتا؟

- A. Type of material
- B. Pressure exerted by material on smooth surface ✓ **Correct answer**
- C. Temperature
- D. Cross sectional area

A. Wrong: the type of material IS a factor affecting resistance.

B. Correct: the pressure exerted by a material on a smooth surface is not a factor affecting its resistance; resistance depends on material, temperature, length and cross-sectional area.

C. Wrong: temperature IS a factor affecting resistance.

D. Wrong: cross-sectional area IS a factor affecting resistance.

19 Electrical

In case of electrical shock, what kind of first aid should be provided to the person? بجلی کے جھٹکے کی صورت میں، فرد کو کس قسم کی ابتدائی طبی امداد فراہم کی جانی چاہیے؟

- A. Providing Oxygen ✓ **Correct answer**
- B. Providing water
- C. Dig in earth
- D. Anti shock strip

A. Correct: providing oxygen is the only first-aid measure among the options.

B. Wrong: providing water is not first aid for electric shock.

C. Wrong: digging a shock victim in earth is a dangerous myth, not first aid.

D. Wrong: an anti shock strip is not a first-aid measure.

Question 20 Electrical

___ are light sensitive variable resistors روشنی کے حساس متغیر ریزسٹرس ہیں۔

- A. Potential resistors
- B. Base resistors
- C. Terminal resistors
- D. Photo resistors ✓ **Correct answer**

A. Wrong: potential resistors are not a device.

B. Wrong: base resistors are not a device.

C. Wrong: terminal resistors are not a device.

D. Correct: photo resistors (light-dependent resistors) change resistance with light.

21 Physics

کس عمل کے ذریعے ایٹم الیکٹران ?The process by which atoms gain or lose electrons is called

حاصل کرتے یا کھوتے ہیں کہلاتے ہیں؟

- A. Randomization
- B. Ionization ✓ **Correct answer**
- C. Ranging
- D. Electrolysis
- E. None of these

A. Wrong: randomization has nothing to do with atoms gaining or losing electrons.

B. Correct: ionization is the process by which atoms gain or lose electrons.

C. Wrong: ranging is not this process.

D. Wrong: electrolysis is chemical decomposition by an electric current.

E. Wrong: option B is correct.

Question 22 Electrical

کم از کم وولٹیج جو انسانی : The minimum voltage which can flow current in the human body is

جسم میں کرنٹ بہا سکتا ہے 70 سے 80 وولٹ ہے

- A. 40 to 50 volts
- B. 50 to 60 volts
- C. 60 to 70 volts
- D. 70 to 80 volts ✓ **Correct answer**

A. Wrong: 40 to 50 volts is not the figure the bank gives.

B. Wrong: 50 to 60 volts is not the figure the bank gives.

C. Wrong: 60 to 70 volts is not the figure the bank gives.

The minimum voltage which can flow current in the human body is 70 to 80 volts (the site's own explanation and the paper's Urdu line both state this figure).

Question 23 Electrical

کم از کم کرنٹ جو انسان کو کوما میں لے سکتا ہے وہ ہے : The minimum current which can get human in comma is

- A. 10 micro ampere
- B. 2 milli ampere
- C. 10 milli ampere
- D. 100 milli ampere ✓ **Correct answer**

A. Wrong: 10 microampere is far below even the perception threshold.

B. Wrong: 2 milliampere causes only a mild tingle; the site's own explanation admits it is not enough to cause severe injury or a coma.

C. Wrong: 10 milliampere is around the let-go threshold — painful, but not coma.

D. Correct: a current that can put a person in a coma is in the range of 50 to 100 mA (the site's own explanation), and 100 mA is the minimum current for ventricular fibrillation; it is the only option in that range.

Question 24 Electrical

انسانی جسم کی اوسط مزاحمت یہ ہے : The average resistance of human body is

- A. 1 k ✓ **Correct answer**
- B. 1.5 k
- C. 2 k
- D. 5 k

A. Correct: the average resistance of the human body is about 1 k ohm (the bank answer).

5 k ohm is not the bank figure.

C. Wrong: 2 k ohm is not the bank figure.

D. Wrong: 5 k ohm is not the bank figure.

Question 25 Electrical

For the protection of electrical appliances fuses are widely used, the value of fuse is in :

- A. Amperes ✓ **Correct answer**
- B. watts
- C. Volts
- D. Ohms

A. Correct: a fuse is rated by the current it carries, so its value is in amperes.

B. Wrong: watts measure power, not a fuse rating.

C. Wrong: volts measure voltage, not a fuse rating.

D. Wrong: ohms measure resistance, not a fuse rating.

Question 26 Electrical

The value of fuse current is chosen :

- A. Less than the affordable current of the load ✓ **Correct answer**
- B. Greater than the load current
- C. Equal to the load current
- D. None of the above

A. Correct: the fuse current is chosen less than the allowable (capacity) current of the load — the site's standalone explanation confirms this, and its Urdu line reads 'load ke qabil-e-istita'at current se kam'.

B. Wrong: the bank answer is A, per the site's own explanation; see the disclosure in the

C. Wrong: the fuse current is not chosen equal to the load current.

D. Wrong: option A is correct.

Question 27 Electrical

The process of changing alternating current to direct current is called as ____ .

- A. resillence
- B. simplification
- C. Rectification ✓ **Correct answer**
- D. Resonance

A. Wrong: resillence is a garbled distractor, not the name of AC-to-DC conversion.

B. Wrong: simplification is not the name of AC-to-DC conversion.

C. Correct: rectification is the process of changing alternating current to direct current (the same stem as Q7).

D. Wrong: resonance is a frequency phenomenon, not AC-to-DC conversion.

Question 28 Electrical

___ consist of two conductors separated by non conductive region .

- A. Thermostat
- B. Electronic valve
- C. Thermal valve
- D. Capacitor ✓ **Correct answer**

A. Wrong: a thermostat is a temperature switch, not two conductors separated by a dielectric.

B. Wrong: an electronic valve is an old name for a vacuum tube.

thermal valve is not two conductors separated by a non-conductive region.

D. Correct: a capacitor consists of two conductors separated by a non-conductive (dielectric) region.

Question 29 Electrical

Practical resistors also have some inductance and ___ which effect the relation between voltage and current in alternating current circuits.

- A. Zero capacitance
- B. Insulation
- C. Zero tolerance
- D. Capacitance ✓ **Correct answer**

A. Wrong: the stray capacitance of a practical resistor is non-zero, not zero.

B. Wrong: insulation is not the second parasitic property named here.

C. Wrong: zero tolerance is not the second parasitic property named here.

D. Correct: practical resistors also have some inductance and capacitance, which affect the voltage-current relation in AC circuits.

Question 30 Electrical

ایک مثالی . ___ The behavior of an ideal resister is dictated by the relationship specified by

مزاحمت کار کا رویہ ___ کی طرف سے متعین تعلق سے طے ہوتا ہے۔

- A. Sync Theorem
- B. Bernoulli's equation
- C. Faraday's law
- D. Ohm's law ✓ **Correct answer**

A. Wrong: there is no 'Sync Theorem' governing a resistor.

ernoulli's equation governs fluid flow, not resistors.

C. Wrong: Faraday's law governs electromagnetic induction, not resistors.

D. Correct: the behaviour of an ideal resistor is dictated by Ohm's law (V = IR).

Question 31 Electrical

مندرجہ ذیل میں سے کون سا مواد موصل ہے؟ ? Which one of the following material is a conductor

- A. Silver ✓ **Correct answer**
- B. Rubber
- C. Glass
- D. Teflon

A. Correct: silver is a conductor — the best conductor among the options.

B. Wrong: rubber is an insulator.

C. Wrong: glass is an insulator.

D. Wrong: Teflon is an insulator.

Question 32 Physics

زمین کی سطح A body rolling freely on the surface of earth eventually comes to rest because

پر آزادانہ طور پر گھومنے والا جسم آخر کار آرام کرتا ہے کیونکہ

- A. It has mass
- B. It suffers fraction ✓ **Correct answer**
- C. It has inertia of rest
- D. It has a momentum

A. Wrong: having mass does not stop a rolling body; mass alone causes no deceleration.

B. Correct: a body rolling freely comes to rest because it suffers friction.

ertia of rest keeps a body at rest; it does not stop a moving body.

D. Wrong: momentum is why the body keeps rolling, not why it stops.

Question 33 Electrical

A moter operates from a 120-volt electrical source and use four amperes of current. What is the power generated by the motor? ایک موٹر 120 وولٹ کے برقی ماخذ سے چلتی ہے اور کرنٹ کے چار ایمپیئر استعمال کرتی ہے۔

- A. 30 W
- B. 120 W
- C. 48 W
- D. 480 W ✓ **Correct answer**

A. Wrong: 30 W is 120 divided by 4, not power.

B. Wrong: 120 W is the voltage alone, not power.

C. Wrong: 48 W is 120 times 0.4, not the power here.

D. Correct: power P = V x I = 120 V x 4 A = 480 W.

Question 34 General Knowledge

When you go to the supermarket and purchase toothpaste produced by Procter & Gamble (P&G), you are an example of P&G's

- A. suppliers
- B. customers ✓ **Correct answer**
- C. producers
- D. stockholders

A. Wrong: suppliers supply the product; a buyer is not a supplier.

uying toothpaste makes you a customer of the producer.

C. Wrong: producers make the product; a buyer is not a producer.

D. Wrong: stockholders own shares; a buyer is not a stockholder.

Question 35 Physics

The study of motion of body is called :

- A. Mechanics ✓ **Correct answer**
- B. Heat
- C. Light
- D. Sound

A. Correct: mechanics is the study of motion of bodies.

B. Wrong: heat is the study of thermal energy.

C. Wrong: light is the study of optics.

D. Wrong: sound is the study of acoustics.

Question 36 Physics

The value of 'g' outside the earth is :

- A. 10 m/s2 ✓ **Correct answer**
- B. 0.1 m /s2
- C. 9.8 m/s2
- D. None of these

A. Correct: the value of g at a particular point outside the earth is 10 m/s2 (the site's own explanation states this).

B. Wrong: 0.1 m/s2 is not the figure the bank gives.

3 m/s2 is the surface value, the bank answer here is 10 m/s2.

D. Wrong: option A is correct.

Question 37 Physics

A ball falls vertically and bounces on the ground . The following statements are about the focus acting while the balls is in contact with the ground. Which statement is correct ?

- A. The force that the ball exerts on the ground is always equal to the weight of the ball
- B. The force that the ball exerts on the ground is always equal in magnitude and opposite in the direction to the force the ground exerts on the ball ✓ **Correct answer**
- C. The force that the ball exerts on the ground is always greater than the weight of ball
- D. None of these

A. Wrong: the force the ball exerts on the ground during impact exceeds the ball's weight (it must decelerate the ball), so it is not always equal to the weight.

B. Correct: by Newton's third law the force the ball exerts on the ground is always equal in magnitude and opposite in direction to the force the ground exerts on the ball — true at every instant.

C. Wrong: not always greater: at the instants of first and last contact the force equals the weight.

D. Wrong: option B is correct.

Question 38 Physics

Newton's third law concerns the forces of interaction between two bodies. Which of following statements relating to third law is not correct?

two forces must act on different bodies

- B. The two forces are always opposite in direction
- C. The two forces are at all times equal in magnitude The
- D. The two forces are equal and opposite so the bodies are in equilibrium ✓ **Correct answer**

A. Wrong: this statement is correct: the two forces of an action-reaction pair act on different bodies.

B. Wrong: this statement is correct: the two forces are always opposite in direction.

C. Wrong: this statement is correct: the two forces are at all times equal in magnitude.

D. Correct: this is the NOT-correct statement: equal and opposite forces act on different bodies, so they do not cancel out and leave the bodies in equilibrium.

Question 39 Physics

Which of the following physical phenomena can not be described only by the wave theory of electromagnetic radiation? مندرجہ ذیل میں سے کون سا جسمانی مظاہر صرف برقی مقناطیسی تابکاری کی لہر تھیوری سے بیان نہیں کیا جا سکتا؟

- A. Diffraction
- B. interference
- C. Photoelectric emission ✓ **Correct answer**
- D. Polarization

A. Wrong: diffraction is described by the wave theory.

B. Wrong: interference is described by the wave theory.

C. Correct: photoelectric emission cannot be described by the wave theory alone; it needs the particle (photon) theory.

D. Wrong: polarization is described by the wave theory.

An object whose mass is 100 grams starts from rest and moves with consent acceleration of 20 centimeters per second square. At the end of 8 seconds its momentum is in g cm/s

- A. 500
- B. 8000
- C. 16000 ✓ **Correct answer**
- D. 3300

A. Wrong: 500 g cm/s does not follow from the numbers.

B. Wrong: 8000 g cm/s does not follow from the numbers.

C. Correct: velocity after 8 s is v = a x t = 20 x 8 = 160 cm/s, so momentum p = m x v = 100 x 160 = 16000 g cm/s.

D. Wrong: 3300 g cm/s does not follow from the numbers.

Question 41 General Knowledge

O. XIV, of C.P.C. contains ____ Rules?

- A. 7 ✓ **Correct answer**
- B. 8
- C. 3
- D. 5

A. Correct: Order XIV of the C.P.C. contains 7 Rules (Rules 1 to 7).

B. Wrong: Order XIV does not contain 8 rules.

C. Wrong: Order XIV does not contain 3 rules.

D. Wrong: Order XIV does not contain 5 rules.

42 Physics

Four particles independently move at the same speed in a direction perpendicular to the same magnetic field. Which particle is deflected the most ?

- A. A copper ion
- B. A helium nucleus
- C. An electron ✓ **Correct answer**
- D. A proton

A. Wrong: a copper ion is heavy, so it is deflected the least.

B. Wrong: a helium nucleus carries twice the charge but is about four times as heavy as a proton, so it is deflected less than an electron.

C. Correct: the electron is deflected the most: the radius of its path (r = mv/qB) is the smallest because it has the smallest mass-to-charge ratio.

D. Wrong: a proton is much heavier than an electron, so it is deflected less.

Question 43 Physics

Which one of the following is the property of a uniform gravitational field

- A. It acts equally in all directions
- B. Its field strength is the same at all points within it ✓ **Correct answer**
- C. The gravitational potential has the same value at all points within it
- D. None of these

A. Wrong: a uniform field acts in one direction, not equally in all directions.

B. Correct: in a uniform gravitational field the field strength is the same at all points within it — that is the defining property.

C. Wrong: the gravitational potential does NOT have the same value at all points; it varies with position (height).

otion B is correct.

Question 44 Mathematics

Name the property x+y = y+x

- A. Commutative property of addition ✓ **Correct answer**
- B. Commutative property of multiplication
- C. Additive inverse
- D. None of these

A. Correct: x + y = y + x is the commutative property of addition.

B. Wrong: the commutative property of multiplication is x times y = y times x.

C. Wrong: the additive inverse is x + (-x) = 0.

D. Wrong: option A is correct.

Question 45 Physics

If a process can not be retraced in the backward direction by reversing the controlling factors. it is an

- A. Reversible process
- B. Irreversible process ✓ **Correct answer**
- C. Efficient process
- D. None of these

A. Wrong: a reversible process CAN be retraced in the backward direction.

B. Correct: a process that cannot be retraced by reversing the controlling factors is an irreversible process.

C. Wrong: efficiency is unrelated to whether a process can be retraced.

D. Wrong: option B is correct.

46 Physics

The potential difference between the terminal of a battery in open circuit is 2.3 V .Where it is connected accross a resistence of 5.0 .The potential fails to 1.5 V . What is the current of battery

- A. 0.36 A
- B. 0.38 A
- C. 0.16 A
- D. 0.26 A

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)

A. Wrong: 0.36 A would need a terminal voltage of 1.8 V across the 5.0 ohm resistor, but the printed terminal voltage is 1.5 V.

B. Wrong: 0.38 A would need a terminal voltage of 1.9 V across the 5.0 ohm resistor, but the printed terminal voltage is 1.5 V.

C. Wrong: 0.16 A is (2.3 − 1.5) divided by 5.0 — the lost volts divided by the external resistance — which is not the current; the current is the terminal voltage divided by the resistance.

D. Wrong: 0.26 A would need a terminal voltage of 1.3 V across the 5.0 ohm resistor, but the printed terminal voltage is 1.5 V.

Question 47 Physics

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

- A. 0.96 w ✓ **Correct answer**
- B. 2.96 w
- C. 1.96 w

A. Correct: at height R/50 the force is W divided by (1 + 1/50) squared, about 0.96 W.

B. Wrong: 2.96 W is greater than the surface force, which is impossible at a height.

C. Wrong: 1.96 W is greater than the surface force, which is impossible at a height.

D. Wrong: 0.93 W is not the value (1 + 1/50) squared gives.

Question 48 Mathematics

number of subsets of (x,y) is

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

A. Wrong: a two-element set has more than 1 subset.

B. Wrong: a two-element set has more than 2 subsets.

C. Wrong: a two-element set has more than 3 subsets.

D. Correct: the number of subsets of a set with 2 elements is 2 squared = 4.

Question 49 Mathematics

An angle whose measure is greater than 180 but less than 360

- A. Reflex angle ✓ **Correct answer**
- B. Complete angle
- C. Obtuse angle
- D. Acute angle

A. Correct: an angle greater than 180 degrees but less than 360 degrees is a reflex angle.

complete angle is 360 degrees.

C. Wrong: an obtuse angle is greater than 90 degrees but less than 180 degrees.

D. Wrong: an acute angle is less than 90 degrees.

Question 50 Mathematics

x+3 is

- A. Algebraic expression ✓ **Correct answer**
- B. Algebraic Sentence
- C. True sentence
- D. False sentence

A. Correct: x + 3 has no equals sign, so it is an algebraic expression, not a sentence.

B. Wrong: an algebraic sentence needs an equation or inequality sign.

C. Wrong: x + 3 is not a true sentence; it asserts nothing.

D. Wrong: x + 3 is not a false sentence; it asserts nothing.

Question 51 Mathematics

The coefficient of -2x is

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

A. Wrong: the coefficient of x in -2x is not zero.

B. Wrong: the coefficient of x in -2x is not 1.

C. Wrong: the coefficient of x in -2x is not 2.

ne coefficient of -2x is -2.

Question 52 Mathematics

Solve for 5-2r > 1

- A. r > 2
- B. r < 2 ✓ **Correct answer**
- C. r=2
- D. None of these

A. Wrong: 5 - 2r > 1 gives -2r > -4, and dividing by -2 reverses the inequality, so r is less than 2, not greater.

B. Correct: 5 - 2r > 1 gives -2r > -4, so r < 2.

C. Wrong: r = 2 does not satisfy the strict inequality (5 - 4 = 1, which is not greater than 1).

D. Wrong: option B is correct.

Question 53 General Knowledge

?The word geometry means جیومیٹری کا مطلب ہے۔

- A. Distance from earth from moon
- B. Measurement of the earth ✓ **Correct answer**
- C. measurement of the sun
- D. Satellite measurement of the moon
- E. None of these

A. Wrong: geometry is not the distance from the earth to the moon.

B. Correct: geometry means measurement of the earth (geo = earth, metry = measurement).

C. Wrong: geometry is not the measurement of the sun.

eometry is not satellite measurement of the moon.

E. Wrong: option B is correct.

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