Q1	Four objects have masses, 11 g, 12.4 g, 66.37 g and 4.201g respectively. The total mass of all the four objects correct to appropriate significant figures is:
Q1_OA	93.971 g
Q1_OB	93.97 g
Q1_OC	94 g
Q1_OD	94.0 g
Q2	In an experiment to determine the value of acceleration due to gravity (g) using a simple pendulum, the length of the pendulum is recorded as (60.0 $\pm$0.1) cm and corresponding time period of oscillation as (1.55$\pm$0.01) s. The maximum percentage error in value of g is:
Q2_OA	0.7
Q2_OB	1.5
Q2_OC	3.2
Q2_OD	4.7
Q3	Kiran performs an experiment to determine the resistivity of given wire using Ohm's law experiment. She records the following data: Length of wire: (240$\pm$ 0.1) cm, Diameter of wire: (1.00 $\pm$ 0.01) mm, Current through the wire: (1.0$\pm$0.1) A, Potential drop across the wire: (50$\pm$1) mV. The resistivity of the wire is:
Q3_OA	$(1.4 \pm 0.1) \times 10^{-8}$ Ω m
Q3_OB	$(1.6 \pm 0.2) \times 10^{-8}$ Ω m
Q3_OC	$(1.6 \pm 0.1) \times 10^{-8}$ Ω m
Q3_OD	$(2.1 \pm 0.1) \times 10^{-8}$ Ω m
Q4	A wheel is turning at a constant rate. It completes 50 revolutions in 5 s. Its angular speed, in rad/s is:
Q4_OA	0.31
Q4_OB	0.63
Q4_OC	31
Q4_OD	63
Q5	A wheel starts from rest. Its angular acceleration at any time t is given by $4t^3$. The angle through which it turns in time t is given by:
Q5_OA	$t^5/15$
Q5_OB	$t^5/10$
Q5_OC	$t^5/5$
Q5_OD	t^5
Q6	The moment of inertia of a circular disc, about an axis perpendicular to the disc and passing through its centre is 0.80 kg m^2. When a 1.5 kg mass is added to its rim, 0.20 m from the axis, its moment of inertia becomes:
Q6_OA	0.40 kg m^2

Q6_OB	0.46 kg m²
Q6_OC	0.76 kg m²
Q6_OD	0.86 kg m²
Q7	The length of a cylinder is 0.30 m and its radius is 0.16 m. Its moment of inertia, about the cylinder axis on which it is mounted, is 0.032 kg m². A string is wound around the cylinder and pulled with a force of 1.5 N. The angular acceleration, in rad/s ², of the cylinder is:
Q7_OA	1.5
Q7_OB	2.5
Q7_OC	7.5
Q7_OD	9.0
Q8	A particle moves in a simple harmonic motion with period T along the x-axis back and forth, from $x = -x_m$ to $x = +x_m$. At time t=0, it is at $x = -x_m$. At $t = 0.25T$, it is:
Q8_OA	at x=0 and is travelling towards $x = -x_m$
Q8_OB	at x=0 and is travelling towards $x = +x_m$
Q8_OC	at $x = +x_m$ and is at rest
Q8_OD	between x=0 and $x = +x_m$ and travelling towards $x = +x_m$
Q9	In simple harmonic motion, the displacement is maximum when the:
Q9_OA	velocity is maximum
Q9_OB	acceleration is zero
Q9_OC	velocity is zero
Q9_OD	kinetic energy is maximum
Q10	A particle is in simple harmonic motion along the x- axis, with an amplitude x=A. When it is at x=A/2, its kinetic energy (K) is 6 J and its potential energy (U, measured with U=0 at x=0) is 2J.Which of the following is correct when the particle is at x=+ A?
Q10_OA	K= 8 J, U=0
Q10_OB	K= 6 J, U= $-$ 2 J
Q10_OC	K= 6 J, U= 2 J
Q10_OD	K= 0, U= 8 J
Q11	Two sinusoidal waves have the same angular frequency, the same amplitude A and travel in the same direction in the same medium. If they differ in phase by 60º, the amplitude of the resultant wave is:
Q11_OA	$A/2$
Q11_OB	$A \sqrt{3}/2$
Q11_OC	A
Q11_OD	$A \sqrt{3}$
Q12	A source emits sound with a frequency of 1000 Hz. Both the source and the

	observer are moving towards each other with the same speed, 90 m/s. If the speed of the sound is 340 m/s, the frequency of sound as heard by the observer is:
Q12_OA	275 Hz
Q12_OB	581 Hz
Q12_OC	1720 Hz
Q12_OD	2150 Hz
Q13	The dipole moment of a dipole has a magnitude of 4.0×10^{-9} C m. It is placed perpendicular to an electric field, 120 N/C. The dipole rotates so it is in the same direction as the field. The work done by the field in this process is:
Q13_OA	9.6×10^{-7} J
Q13_OB	-9.6×10^{-7} J
Q13_OC	4.8×10^{-7} J
Q13_OD	-4.8×10^{-7} J
Q14	A 1.0 µC charge is placed at the centre of a cube of side 10 cm. The total electric flux through all sides of the cube is:
Q14_OA	5.5×10^{3} N m² /C
Q14_OB	2.1×10^{4} N m² /C
Q14_OC	1.1×10^{5} N m² /C
Q14_OD	1.4×10^{4} N m² /C
Q15	Twenty seven identical spherical raindrops are each at a potential V, relative to the potential far away. They combine and form one spherical drop. The potential of the new drop is:
Q15_OA	$V/27$
Q15_OB	$27\,V$
Q15_OC	$V/9$
Q15_OD	$9\,V$
Q16	Two charges q_1 and q_2 are located at $x= a$ and $x= 2a$, respectively. A third charge Q is placed at the origin of the x- axis. For the net force on Q to be zero, q_1/q_2 must be:
Q16_OA	$\dfrac{1}{2}$
Q16_OB	$-\dfrac{1}{2}$
Q16_OC	$\dfrac{1}{4}$
Q16_OD	$-\dfrac{1}{4}$
Q17	A parallel plate capacitor is charged by a battery. After charging, the battery is disconnected. Then the plates are pulled apart so that the separation

	between the plates becomes four times the original separation. Which of the following quantities becomes four times due to this process?
Q17_OA	Capacitance
Q17_OB	Stored energy
Q17_OC	Surface charge density on each plate
Q17_OD	Electric field between the plates.
Q18	A metallic wire of cross-sectional area 3.0×10^{-6} m² carries a current of 6.0 A. If the electron drift speed is 3.0×10^{-4} m/s ,the free electron density (electrons/m³) in the wire is:
Q18_OA	4.2×10^{28}
Q18_OB	8.5×10^{28}
Q18_OC	1.1×10^{29}
Q18_OD	1.6×10^{29}
Q19	Five resistors, each of value 20 Ω, are connected in parallel. This combination is connected to a 20 V emf device. The current in any one of the resistors is:
Q19_OA	0.50 A
Q19_OB	1.0 A
Q19_OC	2.0 A
Q19_OD	4.0 A
Q20	Two identical batteries, each of emf 12 V have the same internal resistance, 1 Ω. They are connected in parallel by connecting their positive terminals together and their negative terminals together. This combination is then connected to a 5.5 Ω resistor. The current in the 5.5 Ω resistor is:
Q20_OA	0 .5 A
Q20_OB	1.0 A
Q20_OC	1.5 A
Q20_OD	2.0 A
Q21	A battery of 6 V is used to pass a current of 0.3 A through a bulb for 5 minutes. The energy dissipated by this bulb in 5 minutes is:
Q21_OA	9 J
Q21_OB	90 J
Q21_OC	270 J
Q21_OD	540 J
Q22	The focal length of a diverging lens with one flat surface is −20 cm. The radius of curvature for the curved surface is 10 cm. The refractive index of the lens is:
Q22_OA	1.2

Q22_OB	1.3
Q22_OC	1.5
Q22_OD	1.6
Q23	In a Young's double slit experiment; the separation between the slits is doubled. To maintain the same fringe width, the distance between the slit and screen, D must be changed to:
Q23_OA	$2D$
Q23_OB	$4D$
Q23_OC	$D/2$
Q23_OD	$D/4$
Q24	An object is placed in front of a convex lens at a distance less than f. The image formed is:
Q24_OA	real and smaller than the object
Q24_OB	real and larger than the object
Q24_OC	virtual and smaller than the object
Q24_OD	virtual and larger than the object
Q25	The refractive index for water and glass are respectively 1.50 and 1.33. The total internal reflection at an interface between this glass and water:
Q25_OA	occurs whenever light goes from glass to water
Q25_OB	occurs whenever light goes from water to glass
Q25_OC	may occur whenever light goes from glass to water
Q25_OD	may occur whenever light goes from water to glass
Q26	Identify the single celled eukaryote which is both autotrophic and heterotrophic?
Q26_OA	Amoeba
Q26_OB	Entamoeba
Q26_OC	Euglena
Q26_OD	Bread mould

Q27	Which of the following is not grouped as fish?
	     A) Whale
	     B) Prawn
	     C) Shark

Q27_OA	Only A
Q27_OB	Only B
Q27_OC	A and B
Q27_OD	A, B and C
Q28	Ginger is underground:
Q28_OA	root

Q28_OB	stem
Q28_OC	bud
Q28_OD	scaly leaf
Q29	The organs of excretion in earthworms are:
Q29_OA	Kidney
Q29_OB	Malpighian tubules
Q29_OC	Nephridia
Q29_OD	Green glands
Q30	Gametophyte is the dominant phase in:
Q30_OA	Angiosperms
Q30_OB	Gymnosperms
Q30_OC	Pterydophytes
Q30_OD	Bryophytes
Q31	Identify the organelles which contain DNA?
Q31_OA	Chloroplast and golgi
Q31_OB	Mitochondria and lysosomes
Q31_OC	Golgi and lysosomes
Q31_OD	Mitochondria and chloroplasts
Q32	At metaphase centrioles are at poles of mitotic spindle in:
Q32_OA	Plant cells
Q32_OB	Animal cells
Q32_OC	Protozoan cells
Q32_OD	Both plant and animal cells
Q33	$C_6H_{12}O_6 \rightarrow 2C_2H_5OH + 2CO_2 + 2ATP$ The given equation depicts which of the following? A. Photosynthesis B. Alcoholic fermentation C. Anaerobic respiration in yeast
Q33_OA	A only
Q33_OB	B only
Q33_OC	C only
Q33_OD	Both B and C
Q34	Where does the light dependent phase of photosynthesis occur in the chloroplast of a plant cell?
Q34_OA	Stroma
Q34_OB	Thylakoids of grana

Q34_OC	Lamellae
Q34_OD	Inner membrane of chloroplast
Q35	The correct definition of Osmosis, is:
Q35_OA	It is the movement of water molecules from a region of their high concentration to that of their low concentration.
Q35_OB	It is the movement of water molecules from a region of their low concentration to that of their high concentration.
Q35_OC	It is the movement of water molecules from a region of their high concentration through a membrane.
Q35_OD	It is the movement of water molecules from a region of their high concentration through a semi permeable membrane.
Q36	Out of the following, which part of the human digestive system does not secrete any digestive enzymes?
Q36_OA	Small intestine
Q36_OB	Stomach
Q36_OC	Oesophagus
Q36_OD	Pancreas
Q37	Which part of the ear is responsible for balancing the body while in motion?
Q37_OA	External ear
Q37_OB	Middle ear
Q37_OC	Cochlea
Q37_OD	Auditory nerve
Q38	The part of the brain which informs us that we are hungry and should now eat is:
Q38_OA	Cerebrum
Q38_OB	Cerebellum
Q38_OC	Medulla oblongata
Q38_OD	Hypothalamus
Q39	In the female reproductive system of humans the site for zygote formation is:
Q39_OA	Ovary
Q39_OB	Fallopian tube
Q39_OC	Uterus
Q39_OD	Vagina
Q40	Amoeba reproduces by:
Q40_OA	Binary fission only
Q40_OB	Multiple fission only
Q40_OC	Conjugation only
Q40_OD	Both binary fission and conjugation
Q41	Mendel's only law which is applicable in all sexually reproducing organisms

	is:
Q41_OA	Law of independent assortment
Q41_OB	Law of segregation of factors or law of purity of gametes
Q41_OC	Law of dominance
Q41_OD	Law of reciprocal inheritance
Q42	All biodiversity has evolved through the interaction of variation and _____.
Q42_OA	natural selection
Q42_OB	isolation
Q42_OC	speciation
Q42_OD	differential reproduction
Q43	Which out of the following is the correct representation of central dogma?
Q43_OA	DNA $\longrightarrow$ mRNA $\longrightarrow$ Protein
Q43_OB	mRNA $\longrightarrow$ DNA $\longrightarrow$ Protein
Q43_OC	Protein $\longrightarrow$ mRNA $\longrightarrow$ DNA
Q43_OD	DNA $\longrightarrow$ Protein $\longrightarrow$ mRNA
Q44	Which fungus is used in fermentation of dough to make Bhatura, generate alcohol while baking cakes?
Q44_OA	Bread mould
Q44_OB	Mushroom
Q44_OC	Yeast
Q44_OD	Mycorrhizae
Q45	Farmers raise leguminous crops between crops of wheat and rice for:
Q45_OA	enriching soil by nitrogen fixing bacteria
Q45_OB	growing a variety of crops
Q45_OC	growing enough leguminous crops as it is out staple food
Q45_OD	saving soil from remaining fallow
Q46	A transgenic organism which is raised through biotechnology to have desired qualities is a:
Q46_OA	GMO
Q46_OB	Hybrid
Q46_OC	Vegetatively propagated organism
Q46_OD	An organism with many mutations
Q47	Gene therapy is the application of Biotechnology in the field of _____.
Q47_OA	agriculture
Q47_OB	engineering
Q47_OC	architecture
Q47_OD	medicine and health

Q48	When a pesticide undergoes _____ in a food chain, the last trophic level has the maximum concentration of the pesticide which is termed _____.
Q48_OA	Bioaccumulation ; Eutrophicaiton
Q48_OB	Biological accumulation ; Biomagnification
Q48_OC	Bioaccumulation ; Biomagnification
Q48_OD	Biomagnification ; Biological accumulation
Q49	Excessive accumulation of a particular gas in the atmosphere has caused global warming. Which gas is it?
Q49_OA	Oxygen
Q49_OB	Carbon-di-oxide
Q49_OC	Nitrogen
Q49_OD	Chlorine
Q50	Which out of the following is not a natural ecosystem?
Q50_OA	An agricultural field
Q50_OB	A dense forest
Q50_OC	A vast desert
Q50_OD	A deep ocean
Q51	Out of the following, which national song did Bankim Chandra Chattopadhyay compose?
Q51_OA	Sare Jahan Se Achha
Q51_OB	Vande Mataram
Q51_OC	Kadam Kadam Badhaye Jaa
Q51_OD	Jana gana mana adhinayaka jaya hey
Q52	Why is 'Kalinga war' considered very significant?
Q52_OA	Because Emperor won the war
Q52_OB	Because Emperor lost the war
Q52_OC	Because Emperor became dharmashok and preached Buddhism
Q52_OD	Because Emperor declared truce with the enemy
Q53	Who built the Ho Chi Minh trail during their war against the US?
Q53_OA	Vietnamese
Q53_OB	North Koreans
Q53_OC	Thai
Q53_OD	Cambodians
Q54	The eastern and western ghats mark the edges of the Deccan Plateau. What is true about the ghats?
Q54_OA	Western ghats are higher than Eastern ghats

Q54_OB	The elevation of both the ghats is equal
Q54_OC	Eastern ghats are higher than Western ghats
Q54_OD	Western ghats are discontinuous than Eastern ghats are in one stretch
Q55	What kind of winds are called as 'Loo'?
Q55_OA	Strong, hot dry winds blowing during summer over North India
Q55_OB	Stormy winds carrying dust
Q55_OC	Violent winds preceding rains
Q55_OD	Chilly winds of North Indian winters
Q56	In which state of India is the Gir Forest located?
Q56_OA	Maharashtra
Q56_OB	Gujarat
Q56_OC	Karnataka
Q56_OD	Kerala
Q57	Identify the incorrect statement. National Thermal Power Corporation (NTPC) preserves Natural resources and environment by:
Q57_OA	Ecological monitoring
Q57_OB	Reducing environmental pollution
Q57_OC	Minimizing waste generation
Q57_OD	Using old techniques and equipment
Q58	In 1992, the constitution was amended to make the number of tiers of Indian democracy into:
Q58_OA	2
Q58_OB	3
Q58_OC	4
Q58_OD	5
Q59	One feature of our constitution is that it:
Q59_OA	can be amended with an Act.
Q59_OB	can undergo no change at all.
Q59_OC	has to remain as it was framed by B.R. Ambedkar.
Q59_OD	can be amended but can take effect only from beginning of the year.
Q60	The sessions of the Rajya Sabha are presided over by the _____.
Q60_OA	Speaker
Q60_OB	President
Q60_OC	Prime Minister
Q60_OD	Vice President

Q61	Simplify: $\dfrac{115}{161}$
Q61_OA	$\dfrac{115}{161}$
Q61_OB	$\dfrac{5}{7}$
Q61_OC	$\dfrac{5}{14}$
Q61_OD	$\dfrac{10}{7}$
Q62	What is the HCF of 2500 and 3200?
Q62_OA	5
Q62_OB	10
Q62_OC	25
Q62_OD	100
Q63	What is the least number which when divided by 8, 6, 7 and 9 leaves a reminder of 5 in each case?
Q63_OA	509
Q63_OB	504
Q63_OC	499
Q63_OD	512
Q64	Rs 250 is divided between A and B in the ratio 14 : 11. The amount of money received by A and B respectively is:
Q64_OA	Rs 130 and Rs 120
Q64_OB	Rs 135 and Rs 115
Q64_OC	Rs 140 and Rs 110
Q64_OD	Rs 125 and Rs 125
Q65	If 8 cans costs Rs 1.20, then what is the cost of 40 cans?
Q65_OA	Rs 5
Q65_OB	Rs 6
Q65_OC	Rs 7
Q65_OD	Rs 8
Q66	The marked price of a toy is Rs 40. If a discount of 20% is given, then what is the selling price of the toy?
Q66_OA	Rs 32
Q66_OB	Rs 34
Q66_OC	Rs 30
Q66_OD	Rs 36

Q67	Assuming an average inflation rate of 8% compounded, what is the probable cost of a commodity in 10 years if its present cost is Rs 340?
Q67_OA	Rs 753
Q67_OB	Rs 272
Q67_OC	Rs 730
Q67_OD	Rs 734
Q68	What is the simple interest on Rs 1287 for 4.5 years at 6.3% per annum?
Q68_OA	Rs 346.80
Q68_OB	Rs 364.90
Q68_OC	Rs 369.40
Q68_OD	Rs 354.50
Q69	Saleem was standing in a long queue at the bus stop. He was 15 from either end. How many people were there in the queue?
Q69_OA	15
Q69_OB	20
Q69_OC	27
Q69_OD	29
Q70	A shopkeeper had 25 TV sets. All but six were sold out. How many TV sets were left?
Q70_OA	6
Q70_OB	8
Q70_OC	10
Q70_OD	12
Q71	If MART is coded as 2179 and SLIT is coded as 8539, how will TRAIL be coded?
Q71_OA	97135
Q71_OB	91735
Q71_OC	97153
Q71_OD	97351
Q72	If TRAM is coded as 9712 and MORE is coded as 2475, how will MATRO be coded?
Q72_OA	21794
Q72_OB	21479
Q72_OC	21974
Q72_OD	21947
Q73	In a language, if SURF is coded as UWTH and PROM is coded as RTQO, how will FROND be coded in that language?
Q73_OA	HTPQF
Q73_OB	HTQPF

Q73_OC	THQPF
Q73_OD	HTPFQ
Q74	If a language codes BEAN as FIER and TRAP as XVET, how will it code PRINT?
Q74_OA	TVMRX
Q74_OB	TVRXM
Q74_OC	TVMXR
Q74_OD	VTRMX
Q75	Stephen walked 15 metres to the east, turned north and walked for 12 metres. Then he turned west and walked for 20 metres. From there he walked south for 12 metres. How far was he from where he had started?
Q75_OA	3 metres
Q75_OB	5 metres
Q75_OC	8 metres
Q75_OD	12 metres