KEY AND SOLUTION FOR NEET -2017
Solutions for Version -P

NOTE:

The terms “Easy (E)”, “Medium: (M)”, and “Difficult: (D)” are based on the following points

EASY (E):-

Easy Questions are defined as those questions that can be answered by a student who knows the concept under question. It is a direct application of the concept. A student is expected to have attempted all the EASY Category Questions.

MEDIUM (M):-

Medium Difficulty Questions are those questions that may involve more than one concept. A well-prepared student should be able to identify at least 75% of these and solve them correctly.

DIFFICULT (D):-

Difficult Questions are those questions which definitely involve multiple concepts and are tricky. The students may be led to think away from the ideal method of problem solving. It will require good effort even from the well prepared student to identify the Difficult ones and categorize them accordingly.

KEY FOR NEET 2017							
Code P	KEY	Code Q	KEY	Code R	KEY	Code S	KEY
1	3	1	4	1	4	1	1
2	4	2	4	2	3	2	3
3	4	3	1	3	3	3	1
4	NA	4	2	4	4	4	4
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10	4	10	2	10	3	10	2
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31	1	31	4	31	3	31	2
32	4	32	2	32	NA	32	3
33	1 & 4	33	3	33	2	33	1
34	1	34	1	34	1	34	4
35	3	35	4	35	4	35	4
36	4	36	3	36	2	36	2
37	4	37	4	37	2 & 3	37	3
38	2	38	3	38	1	38	3
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112	3	112	2	112	4	112	4
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137	1	137	NA	137	2	137	2
138	3	138	4 & 3	138	4	138	1
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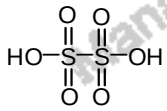
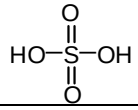
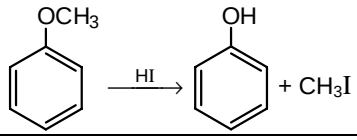
174	3	174	3	174	1	174	NA
175	NA	175	3	175	4	175	2
176	2	176	4	176	2	176	3 & 4
177	3	177	2	177	1	177	3
178	2	178	1	178	4	178	1
179	2	179	3	179	4	179	2
180	2	180	3	180	2	180	1

KEY AND SOLUTION FOR NEET 2017

Sl. No.	Key	Solution	Chapter Name	Difficulty Level			Remarks
				E	M	D	
1	3	$HgCl_2 + 4I^- \rightarrow HgI_4^{2-} + 2Cl^-$ $I_2 + I^- \rightarrow I_3^-$	Coordination Compounds		√		
2	4	Hydration of propyne gives propanone	Hydrocarbons	√			
3	4	Correction definition	Organic Chemistry- Some Basic Principles	√			

4	NA	No correct answer in the options given	Structure of Atom			√	
5	4	$BCl_3 \rightarrow sp^2$ hybridisation $\rightarrow$ 3 bp + 0 lp $\rightarrow$ trigonal planar $\rightarrow$ Bond angle 120°	Chemical Bonding	√			
6	2	Microorganisms (bacteria) present in the soil act as a sink for CO	Environmental Chemistry		√		
7	3	CN^- and CO contains same number of electrons. Isoelectronic species have the same bond order	Chemical bonding	√			
8	2	Product is α, β-unsaturated carbonyl compound	Aldehydes, Ketones and Carboxylic Acids		√		
9	2	Acidified $KMnO_4$ oxidises SO_2 to H_2SO_4 $2KMnO_4 + 5SO_2 + 2H_2O \longrightarrow K_2SO_4 + 2MnSO_4 + 2H_2SO_4$	d & f-Block Elements	√			
10	4	For hydrogen atom, energy depends only on the value of 'n'	Structure of Atom	√			
11	1	Crystal field splitting energy among the ligands is of the order $H_2O < NH_3 < en$ $E \alpha \frac{1}{\lambda}$ Since energy is inversely proportional to wavelength, the correct increasing order of wavelength is $[Co(en)_3]^{3+}, [Co(NH_3)_6]^{3+}, [Co(H_2O)_6]^{3+}$	Coordination Compounds		√		
12	3	The complexes are $[Co(NH_3)_6]Cl_3$, $[Co(NH_3)_5Cl]Cl_2$, $[Co(NH_3)_4Cl_2]Cl$ respectively. Hence the stochiometry of AgCl formed is 3 : 2 : 1	Coordination Compounds	√			
13	4	Picric acid is highly acidic	Alcohols, Phenols and Ethers	√			
14	4	Presence of electron donating group at para position of aniline increases its basic strength	Amines	√			
15	2	$H_2S_4O_6$ is  $H_2S_2O_3$ is 	p-Block Elements	√			
16	2	Mixture of chloroxylenol and terpineol (dettol) acts as antiseptic	Chemistry in Everyday Life	√			
17	2	Correct order of acidity	Hydrocarbons	√			
18	3		Alcohols, Phenols and Ethers	√			
19	3	Since the process is adiabatic, q = 0 $\therefore \Delta U = W = -P_{ext}\Delta V$	Thermodynamics		√		

		$= -2.5\ (4.5 - 2.5) = -5$ L atm $= -5 \times 101.3$ J $\simeq -505$ J					
20	4	o-Nitrophenol is steam volatile	Alcohols, Phenols and Ethers	√			
21	4	Bond angles and bond lengths remain the same in different conformation	Hydrocarbons	√			
22	1	$SrCO_{3(s)} \longrightarrow SrO_{(s)} + CO_{2(g)}$ $K_p = p_{CO_2} = 1.6$ atm Hence the maximum pressure attained is 1.6 atm $P_1V_1 = P_2V_2$ $0.4 \times 20 = 1.6 \times V_2$ $V_2 = \frac{8}{1.6} = 5L$	Equilibrium		√		
23	2	$t_{1/2} = \frac{0.693}{10^{-2}} = 69.3$ sec $20 \xrightarrow{69.3} 10 \xrightarrow{69.3} 5$ $\therefore$ Total time = 138.6 sec	Chemical Kinetics	√			
24	2	Since ΔH = +ve and ΔS = +ve, the reaction is spontaneous when $T\Delta S > \Delta H$ i.e., when the temperature is above equilibrium temperature $T_{eqbm} = \frac{\Delta H}{\Delta S} = \frac{35.5 \times 10^3}{83.6} = 425\,K$	Thermodynamics		√		
25	3	$Zn_{(s)} + Cu^{2+}_{(aq)} \longrightarrow Cu_{(s)} + Zn^{2+}_{(aq)}$ $E_1 = E^\circ_{cell} - \frac{0.06}{2} \log \frac{[Zn^{2+}]}{[Cu^{2+}]}$ $= E^\circ_{cell} - 0.03 \log \frac{10^{-2}}{1}$ $= E^\circ_{cell} + 0.06$ $E_2 = E^\circ_{cell} - 0.03 \log \frac{1}{10^{-2}}$ $= E^\circ_{cell} - 0.06$ $\therefore E_1 > E_2$	Electrochemistry		√		
26	2	Grignard reagent is R–MgX	Coordination Compounds	√			
27	2	$2NH_3 \rightleftharpoons N_2 + 3H_2 \quad \frac{1}{K_1} — (1)$ $N_2 + O_2 \rightleftharpoons 2NO \quad K_2 — (2)$ $3H_2 + \frac{3}{2}O_2 \rightarrow 3H_2O \quad K_3^3 — (3)$ (1) + (2) + (3) $\Rightarrow$ $2NH_3 + \frac{5}{2}O_2 \rightleftharpoons 2NO + 3H_2O$ $\frac{1}{K_1} \times K_2 \times K_3^3$	Equilibrium	√			
28	2	The element, Z = 114 is Flerovium (Fℓ). It belongs to carbon family E.C – $[Rn]5f^{14}6d^{10}7s^27p^2$	Classification of Elements		√		
29	3	In $[Mn(CN)_6]^{3-}$ the central atom	Coordination Compounds		√		

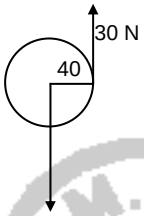
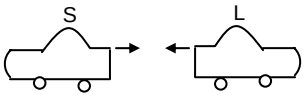
		manganese undergoes d^2sp^3 hybridisation and the structure is octahedral					
30	1	It is aromatic nucleophilic substitution involving benzyne intermediate	Haloalkanes and Haloarenes			√	
31	1	Sn^{2+} is reducing and Pb^{4+} is oxidising due to inert pair effect	p-Block Elements	√			
32	4	In denaturation, proteins lose the biological activity	Biomolecules		√		
33	1 & 4	$FeO_{0.98}$ has non stoichiometric metal excess defect. Frenkel defect is shown by ionic substance in which there is large difference between the size of the cations and anions	Solid State	√			
34	1	The correct IUPAC name is 2-methyl-3-oxohex-4-enal	Aldehydes, Ketones and Carboxylic Acids		√		
35	3	The greater range of oxidation states among the actinoids is due to the fact that 5f, 6d and 7s levels are having comparable energies	d & f-Block Elements	√			
36	4	$2[Ag(CN)_2]^-_{(aq)} + Zn_{(s)} \longrightarrow [Zn(CN)_4]^{2-}_{(aq)} + 2Ag_{(s)}$	Metallurgy		√		
37	4	Because of high hydration enthalpy of Li^+, ionic mobility is the least	s-Block Elements		√		
38	2	Molarity is temperature dependant since its depends on volume	Some Basic Concepts of Chemistry	√			
39	4	The value of molal depression constant (K_f) depends only on the nature of the solvent	Solutions	√			
40	4	$Rate = k[x][y_2]$ $= k'[x_2]^{1/2}[y_2]$ Order = 1.5	Chemical Kinetics		√		
41	4	$Ag_2C_2O_4 \rightleftharpoons \underset{2s}{2Ag^+} + \underset{s}{C_2O_4^{2-}}$ $2s = 2.2\times10^{-4}$ $\therefore s = 1.1\times10^{-4}$ $K_{sp} = 4s^3$ $= 4\times(1.1\times10^{-4})^3$ $= 5.3\times10^{-12}$	Equilibrium		√		
42	2	XX' – Linear XX'_3 – T-shape XX'_5 – Square pyramidal XX'_7 – Pentagonal bipyramidal	p-Block Elements	√			
43	2	A catalyst does not change the equilibrium constant of a reaction	Chemical Kinetics	√			

44	3	$CH_3CH_2OH \xrightarrow[573K]{Cu} CH_3CHO \xrightarrow[\Delta]{OH^-}$ (X) (A) $CH_3-CH=CH-CHO$ (Y) $\xrightarrow{H_2N-NH-\overset{\overset{O}{\|}}{C}-NH_2}$ $CH_3-CH=CH-CH=N-NH-\overset{\overset{O}{\|}}{C}-NH_2$ (Z)	Aldehydes, Ketones and Carboxylic Acids		√		
45	2	Hoffmann bromamide reaction	Amines	√			
46	3	Primary treatment is physical removal of particle.	Microbes in human welfare	√			
47	1	Conservation out of the natural habitat.	Biodiversity and conservation	√			
48	2	PEP is the priamry CO_2 acceptor in C_4 plants.	Photosynthesis in higher plants		√		
49	3	Aerosols have negative impact on the environment.	Environmental issues			√	
50	3	Choanocytes are otherwise known as collar cells.	Animal kingdom	√			
51	2	Paneth cells secrete lysozyme.	Digestion and absorption			√	
52	1	Volume of air remaining in the lungs even after the most forcible expiration is residual volume.	Breathing and exchange of gases		√		
53	4	Viroids are free RNA with low molecualr weight.	Biological classification		√		
54	4	Lipids have molecualr weight less than 1000 Da.	Biomolecules		√		
55	1	*Pinus* is monoecious	Plant kingdom		√		
56	1	Selectable marker help to distinguish transformants from non-transformants.	Biotechnology principles and processes		√		
57	2	ANF act as a check on RAAS.	Excretory products and their elimination		√		
58	3	In *Bougainvillea* thorns are stem modifications.	Morphology of flowering plants	√			
59	3	Hemichordates and chordates have pharyngeal gill slits.	Animal kingdom		√		
60	3	Cellulose microfibrils are radially oriented.	Anatomy of flowering plants		√		
61	1	Ascending limb of loop of Henle is impermeable to water.	Excretory products and their elimination		√		
62	1	Archaebacteria have a highly resistant cell wall.	Biological classification		√		
63	3	White kernel of coconut is cellular endosperm.	Sexual reproduction in flowering plants		√		
64	3	Sapwood is involved in conduction.	Anatomy of flowering plants		√		
65	3	Codons are triplets.	Molecular basis of inheritance			√	
66	1	Human activity is not allowed in core zone.	Biodiversity and its conservation			√	
67	2	Dioecy prevents both autogamy and geitonogamy.	Sexual reproduction in flowering plants		√		

68	4	The cycle starts with condensation of acetyl group with OAA.	Respiration in plants		√		
69	3	Shark and Trygon are marine fishes.	Animal kingdom		√		
70	4	Hepatic portal mainly collect of blood from intestine.	Body fluids and circulation		√		
71	3	Haploid functional megaspore develops to embryo sac.	Sexual reproduction in flowering plants	√			
72	4	Mycorrhizae are the example of mutualism.	Organism and population	√			
73	2	Rejection of transplanted organs is due to cell mediatated immunity.	Human health and diseases		√		
74	1	Absence of nucleus and other cell organelles helps RBC to accommodate maximum haemoglobin.	Body fluids and circulation		√		
75	3	Alexander von Humbolt described species area relationship.	Biodiversity and its conservation	√			
76	2	Entomophily is insect pollination	Sexual reproduction in flowering plants		√		
77	2	Holoenzyme is formed by combination of apoenzyme and Co-enzyme.	Biomolecules		√		
78	2	*Volvox* is a colonial alge	Principles of inheritance		√		
79	1	Down's syndrome is due to non-disjunction of 21st autosome.	Heredity and variation		√		
80	2	DNA fragments are negatively charged.	Principles and process biotechnology	√			
81	3	Pivot joint is a freely movable synovial joint.	Locomotion and Movement		√		
82	2	Asymptote is obtained when K=N	Organism and population			√	
83	1	Myelin sheath is produced by schwann cells and oligo dendrocytes.	Neural control			√	
84	2	Before marketing, expressed proteins are separated and purified by downstream processing.	Principles and process biotechnology	√			
85	2	GnRH stimulate anterior pituitary to secrete FSH and LH.	Chemical co-ordination		√		
86	2	In adults epiphyseal plates close after adolescence not permitting elongation.	Chemical co-ordination		√		
87	1	Forest ecosystem has maximum biomass.	Ecosystem	√			
88	3	Auxins prevent fall of fruit and leaf at early stage.	Plant growth and development		√		
89	2	Hershey and Chase gave the final proof of DNA as genetic material.	Molecular basis of inheritance		√		
90	2	Perissodactyla involves odd toed ungulates.	Living world			√	Out of syllabus
91	1	X = 12 and Y = 7	Breathing and exchange of gas			√	
92	1	All are correctly matched in option 1.	Human health and diseases		√		
93	3	Sickle cell anaemia is qualitative and thalassemia is quantintative.	Principles of inheritance			√	
94	3	Phellem made up of dead cells.	Anatomy of flowering plants			√	

95	3	Pre-molars absent in milk teeth, $\frac{2102}{2102}$ is the dental formula.	Digestion and absorption of gases		√		
96	4	Mitochondria is responsible for extracting energy from carbohydrates.	Cell: The unit of life		√		
97	4	Capacitation mix the sperms capable of fertilizing ova.	Human reproduction			√	Out of syllabus
98	3	Association of Histone 1 with nucleosome indicates condensation of DNA into chromatin fibres.	Molecular basis of inheritance			√	
99	3	C_4 plants respond to higher temperature optimum.	Photosynthesis in higher plants			√	
100	1	Purelines show stability in character inheritance.	Strategies for Enhancement in Food Production		√		
101	2	Mitosis never involve crossing over	Cell cycle and cell division		√		
102	4	Cloaca is the common opening for digestive, excretory and genitial tract	Structural organisation in animal			√	
103	4	Eukaryotes have split gene arrangement.	Molecular basis inheritance		√		
104	1	1856-1863 is the period for mendel's hybridisation experiments	Principles of inheritance and variation		√		
105	4	Ethidium bromide is used to stain the DNA fragments	Biotechnology principles and processes		√		
106	1	Copper ions suppress sperm motility and fertilising capacity of sperms	Reproductive health		√		
107	2	Vertical stratification can be best seen in tropical rain forest.	Ecosystem		√		
108	4	*Acetobacter aceti* produces acetic acid	Microbes in human welfare	√			
109	2	DNA fragments move according to their size.	Biotechnology principles and processes		√		
110	4	Meiosis occur in the zygote producing haploid organisms.	Reproduction in organisms			√	
111	3	*Ectocarpus*, is an alga showing haplo-diplontic life cycle.	Plant kingdom		√		
112	3	Mycoplasma was earlier known as PPLO.	Biological classification	√			
113	1	Root hairs develop from the region of maturation.	Morphology of flowering plants		√		
114	3	In anemophilous plants, flowers are packed into inflorescence .	Sexual reproduction in flowering		√		
115	4	Receptor sites are present on post-synaptic membrane.	Neural control and co-ordination		√		
116	2	Pneumatophores are breathing roots seen in halophytes.	Morphology of flowering plants		√		
117	3	DNA replication in bacteria occur prior to fission.	Biological classification			√	
118	3	4 genotype are, I^AI^A, I^Ai, I^AI^B and I^Bi phenotypes are A, B and AB	Principles of inheritance and variation		√		
119	4	Glycocalyx gives moist and sticky appearance.	Cell: The unit of life			√	
120	1	rRNA constitute 70-80% of total cell RNA.	Molecular basis of inheritance			√	

121	3	APC helps in breaking of centromere .	Cell cycle and cell division			√	Out of syllabus
122	2	Trichomes where not considered.	Principles of inheritance and variation		√		
123	2	*Rhodospirillum* free living anaerobic	Mineral nutrition		√		
124	4	It is the character of angiosperm.	Sexual reproduction in flowering plants	√			
125	3	In person with low sperm count AI is advised.	Reproductive health		√		
126	3	Corpus luteum is the temporary endocrine gland.	Human reproduction		√		
127	3	Vascular cambium produces secondary xylem and secondary phloem.	Anatomy of flowering plants		√		
128	4	Okazaki fragments help in elongation of lagging strand away from replication fork	Molecular basis of inheritance			√	
129	2	Directional as it pushes the mean of the character in one direction.	Evolution			√	Out of syllabus
130	4	Rennin and Pepsin are the enzymes present in gastric juice.	Digestion and absorption		√		
131	1	Coconut fruit is drupe type.	Morphology of flowering plants	√			
132	1	Water potential of pure water is zero.	Transport in plants	√			
133	4	Frog's heart is myogenic and auto excitable.	Structural organisation in animals			√	
134	2	Retinal is a light absorpting pigment derived from vit. A.	Neural control and co-ordination		√		
135	1	MALT constitutes about 50% of lymphoid tissue.	Human health and disease		√		
136	4	$P = \sigma AT^4$ $P_1 = \sigma\pi(12 \times 10^{-2})^2 \times 500^4$ $P_2 = \sigma\pi\ (6 \times 10^{-2})^2 \times 1000^4$ $\frac{P_2}{P_1} = 2^2 = 4$ $P_2 = 4P_1 = 4 \times 450 = 1800$	H & T		√		
137	1	$\frac{dQ}{dt} = \frac{K_1 A\Delta\theta}{\ell} + \frac{K_2 A\Delta\theta}{\ell} = \frac{K.2A\Delta\theta}{\ell}$ $K_1 + K_2 = 2K$ $K = \frac{K_1 + K_2}{2}$	H & T		√		
138	3	$RP \propto \frac{1}{\lambda}$ $\frac{RP_1}{RP_2} = \frac{\lambda_2}{\lambda_1} = \frac{6}{4} = 3 : 2$	Optics	√			

139	3	$Q = \frac{d\phi}{R} = \frac{0-\phi_2}{R} = \frac{\phi_2}{R}$ $\phi = BA$ $= (\mu_0 \times 2 \times 10^4 \times 4) \times \pi \times 100(10^{-2})^2$ $Q = \frac{\phi}{R} = \frac{\mu_0 \times 2 \times 10^4 \times 4 \times \pi \times 10^{-4} \times 100}{10 \times \pi^2}$ $= \frac{4\pi \times 10^{-7} \times 2 \times 10^4 \times 4\pi \times 10^{-4} \times 100}{10\pi^2}$ $= 32 \times 10^{-6} = 32\ \mu C$	EMI		√		
140	2	$KE = \frac{3}{2}kT$ $P = \sqrt{2mKE} = \sqrt{2m \times \frac{3}{2}kT}$ $\lambda = \frac{h}{\sqrt{3mkT}}$	Modern Physics		√		
141	3	 $\tau = 30 \times 40 \times 10^{-2}$ $I\alpha = mR^2\alpha$ $= 3(40 \times 10^{-2}) \times \alpha$ $30 \times 40 \times 10^{-2} = 30(40 \times 10^{-2})^2\alpha$ $\alpha = \frac{30}{3 \times 40 \times 10^{-2}} = 25\ rad\ s^{-2}$	Rotational Dynamics		√		
142	3	$R_1 = \frac{\rho\ell}{A} = \frac{\rho\ell}{\frac{V}{\ell}} = \frac{\rho\ell^2}{V}$ $R_2 = \frac{\rho n^2 \ell^2}{V} = n^2R_1 = n^2R$	Current Electricity		√		
143	3	Last line of Balmer $\frac{1}{\lambda_B} = R\left(\frac{1}{2^2} - \frac{1}{\alpha^2}\right) = \frac{R}{4}$ Last line of LYman $\frac{1}{\lambda_L} = R\left(\frac{1}{1^2} - \frac{1}{\alpha^2}\right) = R$ $\frac{\lambda_B}{\lambda_L} = R \div \frac{R}{4} = 4$	Modern Physics		√		
144	1	$x \times 2\theta = y$ $\theta = \frac{y}{2x}$	Ray Optics	√			
145	4	$F_1 = F_2 = \frac{\mu_0 II}{2\pi d}$ $F = \frac{\sqrt{2}\mu_0 I^2}{2\pi d} = \frac{\mu_0 I^2}{\sqrt{2}\pi d}$	Magnetic Effects		√		
146	4	 $f' = f_0 \times \frac{v + v_L}{v - v_s}$	Waves		√		

		$= 400\frac{(340+16.5)}{(340-22)}$ $= 448$ Hz					
147	3	$A = 3$ cm $\quad x = A\sin\omega t$ $x = 2$ cm $\quad v = A\omega\cos\omega t$ $a = -A\omega^2\sin\omega t$ $v = a$ gives $A\omega\cos\omega t = A\omega^2\sin\omega t$ $\omega = \frac{1}{\tan\omega t} = \cot\omega t$ $2 = 3\sin\omega t \Rightarrow \sin\omega t = \frac{2}{3}$ $\cos\omega t = \frac{\sqrt{5}}{3}$ $\cot\omega t = \frac{\sqrt{5}}{2} = \omega$ $\frac{2\pi}{T} = \frac{\sqrt{5}}{2} \Rightarrow T = \frac{4\pi}{\sqrt{5}}$	Oscillations			√	
148	2	$\eta = \frac{1}{10} = \frac{W}{Q_1} = \frac{10}{Q_1}$ $Q_1 = 100$ $W = Q_1 - Q_2$ $Q_2\ Q_1 - W = 100 - 10 = 90$ J	H & T		√		
149	2	$A = \lambda' = 8\lambda$; $B = \lambda$ $N_A = N_0e^{-8\lambda t}$; $N_B - N_0e^{-\lambda t}$ $\frac{N_B}{N_A} = \frac{e^{-\lambda t}}{e^{-8\lambda t}} = \frac{1}{e}$ $e^{7\lambda t} = \frac{1}{e} \Rightarrow t = -\frac{1}{7\lambda}$	Modern Physics			√	
150	4	$140\rho_0 gA = 130\rho_w gA$ $\rho_0 = \frac{130}{140}.\rho W$ $= \frac{130}{140}\times 1000 = 928$ kg m^{-3}	Properties of Matter		√		
151	3	$t_1v_P = S$ $t_2v_e = S$ $t(v_P + v_e) = S$ $t\left(\frac{S}{t_1}+\frac{S}{t_2}\right) = S \Rightarrow$ $t = \frac{t_1t_2}{(t_1+t_2)}$	Motion in 1D		√		
152	2	$E_1 = \frac{Q^2}{2C}$ $E_2 = \frac{Q^2}{4C}$ Decreases by factor 2	Electrostatics	√			
153	4	W – gravity $mgh = 1\times10^{-3}\times1\times10^3\times10 = 10$ $\frac{1}{2}mv^2 = \frac{1}{2}\times10^{-3}\times2500 = 1.25$ $W_{resistor} = 1.25 - 10$ $= -8.75$ J	Work Power Energy		√		
154	3	No current condition	Current Electricity	√			
155	1	Basic idea	Electronics	√			

156	1	Basic idea	Rotational Dynamics		√		
157	4	$g_h = g\left(1-\frac{2h}{R}\right)$ $g_d = g\left(1-\frac{d}{R}\right)$ $2h = d$ $d = 2 \times 1 = 2$ km	Gravitation		√		
158	4	$2C_v.T + 4C_v'.T$ $= 2.\frac{5}{2}R.T + 4.\frac{3}{2}R.T$ $= 11RT$	H & T		√		
159	1 & 2	$KE = \frac{hc}{\lambda} - \frac{hc}{\lambda_0} = hc\left(\frac{1}{\lambda} - \frac{1}{\lambda_0}\right)$ $= \frac{1}{2}mv^2$ $v = \sqrt{\frac{2}{m}.hc\left(\frac{1}{\lambda} - \frac{1}{\lambda_0}\right)}$ Substituting $v = 0.6 \times 10^6$ m s^{-1}	Modern Physics		√		
160	2	$(\mu - 1)A = -(\mu' - 1)A'$ $(1.42 - 1)A = (1.7 - 1)A'$ $4.2 = 0.7A'$ $A' = \frac{4.2}{0.7} = 6°$	Ray Optics	√			
161	4	$B = \frac{PV}{\Delta V}$ $\frac{\Delta V}{V} = \frac{P}{B} = \frac{3\Delta r}{r}$ $\therefore \frac{\Delta r}{r} = \frac{P}{3B}$	Properties of Matter		√		
162	2	$(2n + 1)\frac{V}{4\ell} = 220$ $(2n + 3)\frac{V}{4\ell} = 260$ Solving n = 5 $\therefore f_0 = \frac{v}{4\ell} = 20$ Hz	Waves		√		
163	1	$C = LT^{-1}$ $G = M^{-1}L^3T^{-2}$ $\frac{e^2}{4\pi\varepsilon_0} = ML^3T^{-2}$ $\frac{1}{C^2}\left(G.\frac{e^2}{4\pi\varepsilon_0}\right)^{1/2} = L$	Units & Measurements		√		
164	1	Basic knowledge	Laws of Motion	√			
165	1	$W = mB\cos\theta$ $W = mB(1(-1)) = 2mB$ $= 2niAB$ $= 2 \times 250 \times 85 \times 10^{-6}$ $\times (2.1 \times 1.25) \times 10^{-4} \times 0.85$ $= 9.4\ \mu J$	Magnetic Effects		√		
166	3	Using the ratio and $K \propto \frac{1}{\ell}$ $K_2 = \frac{K_1}{2}$ $K_3 = \frac{K_1}{3}$	Work Power Energy			√	

		$K_{eff} = K_1\left[1+\frac{1}{2}+\frac{1}{3}\right] = \frac{11}{6}K_1$ But $K_1 = 6$ K $\therefore$ $K_{eff} = 11$ K for parallel combination $K_{eff} = K$ in series combination $\therefore$ the ratio is 1 : 11					
167	2	$W = q(V_A - V_B)$ will be same in all 4 cases	Electrostatics	√			
168	2	Basic knowledge	Gravitation	√			
169	3	$v_x = 5 - 4t$ $v_y = 10$ $\therefore$ $a_x = -4$ $a_y = 0$	Motion in 1D	√			
170	4	$\frac{8\lambda D}{d\mu} = \frac{9}{2}\frac{\lambda D}{d}$ $\therefore$ $\frac{16}{9} = 1.78$	Wave Optics		√		
171	1	$\tan\theta_1 = \frac{B_v}{B_H \cos\phi}$ $\tan\theta_2 = \frac{B_v}{B_H \sin\phi}$ $\cos\phi = \frac{\tan\theta}{\tan\theta_1}$ $\sin\phi = \frac{\tan\theta}{\tan\theta_2}$ $\therefore 1 = \frac{\tan^2\theta}{\tan^2\theta_1} + \frac{\tan^2\theta}{\tan^2\theta_2}$ $\Rightarrow \cot^2\theta = \cot^2\theta_1 + \cot^2\theta_2$	Magnetism			√	
172	3	Basic knowledge	Electronics	√			
173	3	$9 \times 10^9 \Delta E^2$ $= 6.67 \times 10^{-11} \times 1.67 \times 10^{-54}$ $\Delta E^2 = 2 \times 10^{-74}$ $\Delta E = \sqrt{2} \times 10^{-37}$ C	Electrostatics			√	
174	3	$A_v = \beta\frac{R_o}{R_i} = 100 \times \frac{3}{2}$ $= 150$ $A_P = \beta\frac{R_0^2}{R_i} = 15000$	EMI & AC		√		
175	No Option	X_L will be greater immediately after switching ON. $X_C = 0$ $I = \frac{18}{\left(\frac{9}{2}\right)} = 4$ A	EMI & AC			√	
176	2	B falls under g spring will have a restoring force of mg up $\therefore$ $3ma = mg$ $a_A = \frac{g}{3}$, $a_B = g$	Laws of Motion		√		
177	3	Out of P_3 $\frac{I_0}{2}\cos^2 45^\circ = \frac{I_0}{4}$ Out of P_2 $\frac{I_0}{4}\cos^2 45^\circ = \frac{I_0}{8}$	Wave Optics		√		

178	2	$\Delta E = \frac{1}{2}\frac{I_1 I_2}{I_1 + I_2}(\omega_1 - \omega_2)^2$ $= \frac{1}{2}.\frac{I}{2}.(\omega_1 - \omega_2)^2$ $= \frac{1}{4}I(\omega_1 - \omega_2)^2$	Rotational Dynamics		√		
179	2	$C = \frac{E_{rms}}{B_{rm}}$ $B_{rm} = \frac{6}{3\times10^8} = 2\times10^{-8}$ $\therefore\ B_0 = B_{rm}\times\sqrt{2}$ $= 2\times10^{-8}\times\sqrt{2} = 2.83\times10^{-8}$ tesla	EM Waves		√		
180	2	Basic knowledge	H & T	√			