380 PU Five year Integrated M.Sc Programme M.Sc
(Applied Geology, Chemistry, Physics)

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103 PU_2016_380
Consider the following sentences and give attention to the words that are underlined.

(i) He can type fast.
(ii) Dear Albert Einstein, you can still improve.
(iii) I will come tomorrow.
(iv) If you raise the temperature of water to 373K, it will boil.

The meaning implied by the underlined words in each of the above four sentences are ____, ____, ____, and ____ respectively.

- Possibility, Futurity, Certainty, Futurity
- Ability, Ability, Futurity, Certainty
- Possibility, Ability, Certainty, Certainty
- Ability, Possibility, Futurity, Certainty

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104 PU_2016_380
Consider the following sentences.

(i) The earth revolves around the sun.
(ii) Rabindranath Tagore has bought a computer.
(iii) He had solved the problems two hours before he left for the airport.
(iv) I eat cereal for breakfast.
The tense used the above sentences are ____, ____, ____, and ____ respectively.

- Present continuous tense, Past perfect tense, Past tense, Present tense
- Present tense, Present tense, Past tense, Present tense
- Present tense, Past tense, Past perfect tense, Present continuous tense
- Present tense, Present perfect tense, Past perfect tense, Present tense

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101 PU_2016_380
Consider the following lines:-

(i) Photovoltaic energy systems became an option for some people.
(ii) Photovoltaic energy systems becoming an option for some people.

Choose the right option.

- The complete correct sentence is (ii)
- The fragment of a complete sentence is (ii)
- The fragment of a complete sentence is (i)
- The complete correct sentence is (i)

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200 PU_2016_380
Consider two sentences (i), (ii) and its combination (iii). Fill-in the blanks accordingly.

(i) The Indian Institute of Science is in Bangalore.
(ii) It offers several post graduate specializations.
(iii) The Indian Institute of Science, which offers several post graduate specializations, is in Bangalore.

The sentences (i) and (ii) are combined using _____ to get a single sentence (iii).

- Adverb clause
- Conjugation of the verbs
- Noun clause
- Adjective clause

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201 PU_2016_380
Consider the following sentences and give attention to the words that are underlined.
(i) I <u>can</u> run 10 kilometres without stopping.
(ii) <u>Can</u> I come in, Sir?
(iii) You <u>should</u> apologize immediately.
(iv) John <u>should</u> be around here by this time.

The meaning implied by the underlined words in each of the above sentences are ____, ____, ____, and ____ respectively.

- Possibility, Ability, Expectation, Expectation
- Possibility, Permission, Compulsion, Compulsion
- Ability, Permission, Advise, Expectation
- Ability, Ability, Compulsion, Compulsion

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297 PU_2016_380
Choose the correct answer.

- Homonyms are words having same spelling but with different meanings
- Homonyms are words having same pronunciation but have different meanings
- Homophones are words having same pronunciation but have different spellings
- Homonyms are words having same meaning but appear in different spellings

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197 PU_2016_380
Choose the best choice from the consideration of the four sets of words as below:-
(i) Mild steel.
(ii) Steel bar.
(iii) Hot water.
(iv) Water tube.

- All of the four sets contain two nouns

- The set in (i) and (ii) contain an adjective and a noun
- The set in (ii) and (iv) contain two nouns
- The set in (iii) and (iv) contain an adjective and a noun

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199 PU_2016_380

The sentence "Mechatronics is a branch of Mechanics dealing with electronics" is :-

- An exclamatory sentence
- An imperative sentence
- A declarative sentence
- An interrogative sentence

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295 PU_2016_380

Choose the best answer with reference to the sentence:

"More than 20 percent of those who apply for a postgraduate degree fail to pass the admission test, which is a shame."

- The sentence does not provide exact percentage of fail and hence this is an error
- It is not clear whether the admission test is shame or people applying are shame
- The correct sentence would be: "More than 20 percent of those who apply for a postgraduate degree fail in the admission test, which is a shame"
- The given sentence provides clear meaning and it has no error

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299 PU_2016_380

Consider the following sentences, and focus your attention on the usage of the underlined words.

(i) Ensure that your car is regularly <u>serviced</u>.
(ii) They aim to provide a high quality of <u>service</u>.
(iii) My teacher <u>advised</u> him to go home.
(iv) My <u>advice</u> for you is that you see your doctor.

The underlined words are used as ____, ____, ____, and ____ respectively.

- Noun, Noun, Verb, Verb
- Verb, Noun, Verb, Noun
- Noun, Verb, Noun, Verb
- Verb, Verb, Noun, Noun

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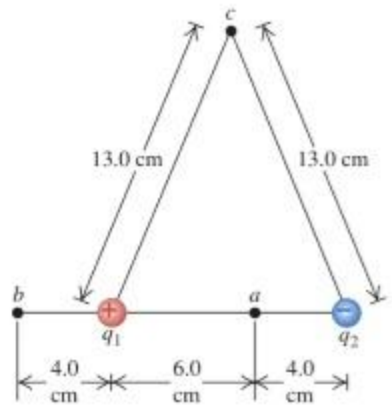
117 PU_2016_380



Two charges q_1 and $q_2 = -q_1$ are separated by a distance as shown in the Figure. Let V_a, V_b, V_c denote the electric potentials at points a, b, c respectively due to the two charges. Then, choose the correct answer.

- $V_a < 0,\ V_b > 0,\ V_c > 0$
- $V_a > 0,\ V_b < 0,\ V_c = 0$
- $V_a < 0,\ V_b < 0,\ V_c = 0$
- $V_a < V_c < V_b$

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127 PU_2016_380

Let h be the Planck's constant, e be the charge and m the mass of electron. Find the de Broglie wavelength λ of an electron which has a kinetic energy of 50 eV.

- $0.1\,h/\sqrt{m\,e}$
- $10\,h/\sqrt{m\,e}$
- $h/\sqrt{2\,m\,e}$
- $h/\sqrt{10\,m\,e}$

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121 PU_2016_380

A circular loop of radius 200mm is made of a metallic wire and it carries a steady current of 10^6A.Calculate the magnitude of magnetic flux density at the centre of the loop:-

- 2π tesla
- $\mu_0\,\pi$ tesla
- 1 tesla
- π tesla

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215 PU_2016_380

Frequency of visible light is of the order of:-

- 5000Å
- 10^{15}Hz
- 10^{10}cm^{-1}

- 10^6dB

15 of 100

125 PU_2016_380

Let λ_{MW} and f_V be the wavelength and frequency of typical microwave radiation and visible light respectively. Then

- $\lambda_{MW} \approx 1\text{m}$ and $f_V \approx 20$ kilohertz
- $\lambda_{MW} \approx 1\text{mm}$ and $f_V \approx 500$ terahertz
- $\lambda_{MW} \approx 1\text{m}$ and $f_V \approx 500$ terahertz
- $\lambda_{MW} \approx 1\mu\text{m}$ and $f_V \approx 500$ terahertz

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108 PU_2016_380

A process is the one in which the pressure on the system remains unchanged throughout the process known as :-

- Adiabatic
- Isochoric
- Isobaric
- Isothermal

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128 PU_2016_380

Let e and m denote the charge and mass of electron respectively. In the photoelectric experiment, let h and f denote the Planck's constant and frequency of light used. Then, the maximum kinetic energy of ejected electronics $K_{\max}$ is related to the stopping potential V_S according to the relation

- $K_{\max}/e = V_S$
- $K_{\max} = eV_S + hf$
- $hf - eK_{\max} = V_S$
- $hf + K_{\max} = eV_S$

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229 PU_2016_380

Choose the correct answer with reference to while light.

- The speed of light in vacuum is the different for different wavelengths, but the speed of light in a material substance is the same for different wavelengths
- The dependence of wave speed and index of refraction on wavelength is called refraction.
- The speed of light in vacuum as well as the speed of light in a material substance is different for different wavelengths
- The dependence of wave speed and index of refraction on wavelength is called dispersion.

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210 PU_2016_380

The force of attraction between the glass molecules of a beaker and molecules of water contained in it is an:-

- Cohesive force
- Frictional force
- Adhesive force
- Electromagnetic force

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224 PU_2016_380

The SI units of tesla is equivalent to:-

- $N \cdot A^{-1} \cdot m$
- $N \cdot s \cdot A^{-1} \cdot m^{-1}$
- $N \cdot C^{-1} \cdot m^{-1}$
- $kg \cdot C^{-1} \cdot s^{-1}$

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207 PU_2016_380

With reference to one dimensional collision, choose the correct statement about the co-efficient of restitution:-

- For inelastic collision $e \leq 1$.
- For an elastic collision $0 \leq e \leq 1$.
- For sticking after collision $e = 0$.
- For an inelastic collision $e = 1$.

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130 PU_2016_380

To perform amplitude modulation, we need to have:-

- Equal frequency modulation signal and carrier wave but with different amplitudes
- A high amplitude constant carrier and a low amplitude modulation signal, but with same frequency
- A high frequency modulation signal and a low frequency constant carrier
- A high frequency constant carrier and a low frequency modulation signal

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124 PU_2016_380

Consider the diffraction and interference fringe patterns observed in experiments with monochromatic light. Choose the correct answer.

- Only diffraction can be explained using superposition of waves

- Diffraction cannot be explained using Huygens principle
- Both diffraction and interference are due to superposition of waves
- Only interference can be explained using superposition of waves

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120 PU_2016_380

A current carrying loop can be treated equivalent to a :-

- Torque
- Magnetic dipole
- Electric dipole
- Voltage generator

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205 PU_2016_380

For a black hole, the escape velocity is:-

- Equal to the speed of the light
- Greater than the speed of the light
- Equal to or greater than the speed of the light
- Equal to or less than the speed of the light

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221 PU_2016_380

Let r be the distance far away from an electric dipole. Then, the electric potential $V(r)$ is

- Inversely proportional to $\sqrt{r}$.
- Inversely proportional to r^2.
- Directly proportional to $1/r^{3/2}$
- Inversely proportional to r.

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123 PU_2016_380

In the Young's double slit experiment, destructive interference occurs when :-

- The path difference is minimum
- The path difference is equal to zero
- The path difference is equal to half-integer number of wavelengths
- The path difference is equal to integer number of wavelengths

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209 PU_2016_380

Polyatomic molecule such as CH_4 has total number of degrees of freedom,

- 1
- 6
- 3
- 9

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216 PU_2016_380

Holograms can be constructed:-

- By lasers but viewed by white light
- By monochromatic light and viewed by lasers
- And viewed by white light
- By white light and viewed by lasers

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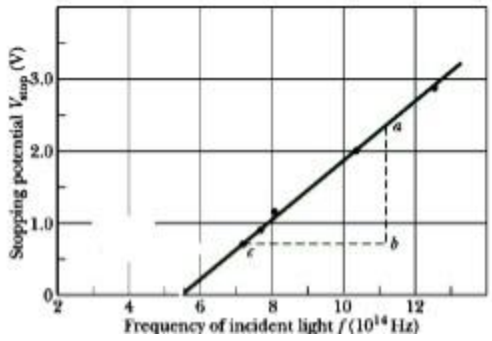
232 PU_2016_380



The result of certain photoelectric effect experiment is plotted as shown in the Figure. The slope of the line gives

- The Planck's constant
- The charge of the electron
- The Planck's constant to charge of electron ratio
- The charge to mass ratio of electron

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111 PU_2016_380

A particle suspended from a vertical spring oscillates 10 times per second. At the highest point of oscillation the springs become un-stretched. Find the maximum speed of the block:-

- 0.25 cm/s
- 0.25π cm/s
- 5π cm/s
- 5 cm/s

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208 PU_2016_380

Mark the correct statement.

- Spring force and kinetic forces are non-conservative forces
- Gravitational force and kinetic frictional forces are conservative forces
- Drag forces and kinetic forces are non-conservative forces
- Gravitational and drag forces are conservative forces

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213 PU_2016_380

At time, t = 0, the velocity of electron is 10^6i cm/sec and the initial position vector r_0 = 100j cm. Obtain the position vector after 0.1 sec.

- 10^5i+10^2j cm
- 100j+10^6i cm
- 10^5j+10^2i cm
- 10^2j+10i cm

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211 PU_2016_380

A light stylus attached to the prong of the tuning fork vibrating 100 times per second dips slightly in a trough full of mercury and produces ripples of wavelength 0.00278 m. Calculate the surface tension of mercury. The density of mercury is, ρ =13600 kgm^{-3}

- 0.4949Nm^{-1}
- 0.4389Nm^{-1}
- 0.02602Nm^{-1}
- 0.5209Nm^{-1}

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126 PU_2016_380

Choose the correct result observed from the photoelectric effect experiment.

- In a given photoelectric effect experiment, the stopping voltage varies inversely with frequency.
- There is a considerable large delay between the time the incident light strikes the surface and the time the electrons are emitted from the surface. This time delay is due to stopping voltage.
- In a given photoelectric effect experiment, the stopping voltage increases linearly with the intensity of light
- In a given photoelectric effect experiment, the stopping voltage increases linearly with frequency.

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234 PU_2016_380

According to energy band formation in solids, if the valence band and conduction band are not separated, then the solid is classified as:-

- Crystal
- Conductor
- Semiconductor

- Insulator

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113 PU_2016_380

If the centripetal force is of the form $F \sim m^a v^b r^c$ find the values of a, b and c:-

- a = 2, b = 1, c = -1
- a = -1, b = -2, c = 1
- a = 1, b = -1, c = 2
- a = 1, b = 2, c = -1

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217 PU_2016_380

Which of the following statements is not true?

- When polarized light is passed through a Nicol prism, the emergent light is circularly polarized
- A Nicol prism can be used both as a polarizer and analyser
- The working of Nicol prism is based on double diffraction and total internal reflection
- Calcite and quartz crystals are doubly refracting

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225 PU_2016_380

The net torque on a current carrying loop in a uniform magnetic field is:-

- Zero
- Proportional to the strength of the magnetic field
- Proportional to the current flowing in the loop
- Not necessarily zero

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227 PU_2016_380

Consider that light is travelling in different media. Choose the correction answer based on wave properties and ray properties of light.

- The frequency of the wave and hence the wavelength of the light wave changes.
- The path of a reflected ray is reversible but the path of a refracted ray is not reversible.
- The path of a reflected ray is not reversible but the path of a refracted ray is reversible.
- The frequency of the light wave does not change when passing from one material to another, and the wavelength of the wave changes.

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263 PU_2016_380

The lengths of the diagonals of a rhombus are 18cm and 24cm. Its length in cm is:-

- 15
- 12

- 12.5
- 9

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147 PU_2016_380

The projection of a vector (i- 2j + k) on the vector (4i- 4j + 7k) is:-

- $\frac{9}{19}$
- $\frac{19}{9}$
- $\frac{5\sqrt{3}}{10}$
- $\frac{\sqrt{6}}{19}$

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250 PU_2016_380

A student appears in 5 papers in an exam and the full marks are the same for each paper. The marks obtained by the student in each paper are in the ratio 6:7:8:9:10, respectively. He obtained 60% of the total full marks. The number of papers where he obtained more than 50% are:-

- 4
- 3
- 2
- 5

44 of 100

260 PU_2016_380

A shopkeeper bought a refrigerator for ₹9000. After allowing a discount on 20% on it, he gains 30%. Then the marked price of the refrigerator is:-

- ₹14675
- ₹14625
- ₹14650
- ₹14600

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238 PU_2016_380

In the multiplicative group of nth roots of unity, the inverse of ω^k is (k<>

- ω^{-1}
- $\omega^{n/k}$
- ω^{n-k}

- $\omega^{1/k}$

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137 PU_2016_380

The sum $S = \frac{1}{9!} + \frac{1}{3!7!} + \frac{1}{5!5!} + \frac{1}{7!3!} + \frac{1}{9!}$ equals

- $\frac{2^9}{10!}$
- $\frac{2^{11}}{9!}$
- $\frac{2^{10}}{7!}$
- $\frac{2^{10}}{8!}$

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154 PU_2016_380

The area enclosed between the curves $y^2=x$ and $y=|x|$ is :-

- $\frac{1}{3}$
- $\frac{1}{6}$
- $\frac{2}{3}$
- 1

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145 PU_2016_380

If 2x + 3y = 6, 8x -9y + 4 = 0 and ax + 6y = 13 are concurrent, then a is:-

- 4
- 2
- 3
- 5

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143 PU_2016_380

The points (-5, 12), (-2, -3), (9, -10) and (6, 5) taken in order form a:-

- straight line
- parallelogram
- square

- trapezium

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152 PU_2016_380

If $f(x) = \int_{\frac{1}{x^2}}^{x^2} \cos\sqrt{t}\ dt$, then $f'(1)$ is equal to

- π
- 4 cos1
- 2 cos1
- cos1

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241 PU_2016_380

Let A be a subset of B.

(i) each element of A is an element of B
(ii) if x is not an element of B then x is not an element of A.

- (ii) is true but (i) is not true.
- Both (i) and (ii) are true
- Neither (i) nor (ii) is true.
- (i) is true but (ii) is not true

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164 PU_2016_380

The point of inflexion of the curve $y=x^4$ is at

- x = 3
- x = 0
- x = 12
- nowhere

53 of 100

138 PU_2016_380

Evaluate the integral $\int \frac{8x+13}{\sqrt{4x+7}}dx =$

- $\frac{1}{6}(8x+9)\sqrt{4x+7}+c$
- $\frac{1}{6}(8x+13)\sqrt{4x+7}+c$
- $\frac{1}{6}(8x+11)\sqrt{4x+7}+c$

- $\frac{1}{6}(8x+15)\sqrt{4x+7}+c$

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239 PU_2016_380

The solution of the equation $\frac{d^3y}{dx^3}-3\frac{d^2y}{dx^2}+3\frac{dy}{dx}-y=0$

is :-

- $e^{2x}\left(c_1x^2+c_2x+c_3\right)$
- $e^{x}\left(c_1x^2+c_2\right)$
- $e^{x}\left(c_1x^2+c_2x+c_3\right)$
- $e^{x}\left(c_1x^2+x(c_2+c_3)\right)$

55 of 100

248 PU_2016_380

The function f(x) = 3x(x-2) has:-

- minimum at x = 1
- maximum at x = 0
- maximum at x = 1
- maximum at x = 2

56 of 100

135 PU_2016_380

What is the midpoint of the line joining the points (1,2,3) and (3,6,3)?

- (2,4,3)
- (1,4,5)
- (1,2,5)
- (2,5,3)

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148 PU_2016_380

If $y=e^{x+y}$, then $\frac{dy}{dx}$ is

- $\frac{1}{1-y}$
- $\frac{y}{1-y}$

- $\frac{y}{x}$
- $\frac{1}{y}$

58 of 100

142 PU_2016_380

The smallest positive integer n for which $(\frac{1+i}{1-i})^n = 1$ is

- 3
- 4
- 1
- 2

59 of 100

254 PU_2016_380

If M and N are positive integers where √(M N) = 8, then which of the following cannot be the value of M + N

- 16
- 65
- 20
- 35

60 of 100

256 PU_2016_380

Three wheels make 60, 36 and 24 revolutions per minute respectively. There is a red spot on the rim of all the three wheels. If the red spot was at the bottom most point when they all started, after how much time would they be at the bottom most point again?

- 5 minutes
- 5 Seconds
- 12 minutes
- 12 seconds

61 of 100

144 PU_2016_380

The point diving the line of joining the two points (1, 7) and (6, -3) in the ratio 2:3 is:-

- (0, 0)
- (3, 4)
- (3, 3)
- (2, 3)

62 of 100

157 PU_2016_380

The number of solutions of the equation $\frac{1}{x+1}+\frac{1}{x+5}=\frac{1}{x+2}+\frac{1}{x+4}$ is

- 0
- 3
- 1
- 2

63 of 100

163 PU_2016_380

The 'c' of Lagrange's Mean Value Theorem for the function $f(x)=x^2+2x-1$; a=0, b=1 is:-

- -1
- 0
- 1
- ½

64 of 100

246 PU_2016_380

The number of elements in the power set of the set is { a, {b,c}, d}

- 4
- 2
- 8
- 6

65 of 100

258 PU_2016_380

The average of 10 scores is 80. When the highest and lowest scores are dropped, the average is 81. If the highest score is 92 then the lowest score will be:-

- 60
- 76
- 48
- 78

66 of 100

242 PU_2016_380

If A and B are finite sets then

(i) $n(AUB) \geq n(A)+n(AnB)$
(ii) $n(AnB) \leq n(A)+n(B)$

- (ii) is true but (i) is not true
- Both (i) and (ii) are true

- (i) is true but (ii) is not true
- Neither (i) nor (ii) is true

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244 PU_2016_380

In a class of 40 students, 12 enrolled for both English and Hindi. 22 enrolled for Hindi. If the students of the class enrolled for at least one of the two subjects, then how many students enrolled for only English and not Hindi?

- 18
- 30
- 12
- 28

68 of 100

140 PU_2016_380

The degree of the differential equation $y_2^{3/2} - y_1^{1/2} - 4 = 0$

- 3
- 2
- 4
- 6

69 of 100

251 PU_2016_380

A man starts from a point A to a point B in a park. He covers 2/5th of the distance AB at a speed of 2a per hour and the remaining 3/5th of the distance AB at a speed of 3b per hour. In the time that he took to travel from A to B he could have run from A to B and back to A at a speed of 5c. Then:-

- 1/a + 1/b = 2/c
- 2/a +3/b = 5/c
- 1/a + 1/b = 1/c
- 2a + 3b = 5c

70 of 100

266 PU_2016_380

The oxidation number and valency of P in phosphorus acid is:-

- +5, +3
- +3, +3
- +3, +5
- +5, +5

71 of 100

189 PU_2016_380

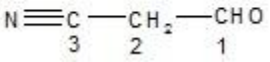
In hexagonal unit cell, the number of unit cells sharing an atom located at an edge :-

- Two
- Four
- Eight
- six

72 of 100

275 PU_2016_380

The hybridizations of the C1, C2 and C3 of the following compound respectively are



- sp, sp^3 and sp
- sp^3, sp^2 and sp
- sp^2, sp^3 and sp
- sp^3, sp^3 and sp

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193 PU_2016_380

The bond energy associated with hydrogen bond is usually in the range of:-

- 5-15 kcal/mol
- 50-100 kcal/mol
- >100 kcal/mol
- <1 kcal/mol

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293 PU_2016_380

The hybridization of carbon atoms in $H_2C=C=CH_2$ is:-

- sp^2 for terminal carbon atoms and sp for central carbon
- All sp
- All sp^2
- None of the above

75 of 100

181 PU_2016_380

The product of the reaction between benzene and RCOCl in the presence of anhydrous $AlCl_3$ is:-

- $PhCO_2H$
- Ph-Cl
- PhCHO

- PhCOR

76 of 100

176 PU_2016_380

The formula of neo-pentyl bromide is:-

- $(H_3C)_2CHCH_2CH_2Br$
- $CH_3CH_2CH_2CH_2(Br)CH_3$
- $(H_3C)_3CCH_2Br$
- $CH_3CH_2CH_2CH_2CH_2Br$

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178 PU_2016_380

The strong reducing agent is:-

- $LiAlH_4$
- $K_2Cr_2O_7$
- 1,4-Benzoquinone
- $KMnO_4$

78 of 100

173 PU_2016_380

What is the oxidation number of chromium in $Na_2Cr_2O_7$?

- 7
- 6
- 2
- 11

79 of 100

186 PU_2016_380

The standard molar enthalpy of formation of SO_2 is:-

- Zero
- The standard molar enthalpy of combustion of gaseous sulphur
- The sum of standard molar enthalpies of formation of SO and O_2
- The standard molar enthalpy of combustion of elemental sulphur

80 of 100

277 PU_2016_380

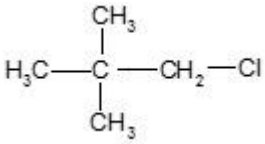
On complete combustion,0.246 g of an organic compound gave 0.198g of carbondioxide. The percentage composition of carbon in the compound is:-

- 21.95 %
- 35.02 %

- 50 %
- 12 %

81 of 100

175 PU_2016_380



The IUPAC name of the following compound is

- 1-Chloro-2,2-dimethylpentane
- 1-Chloropentane
- 3-Chloro-2,2-dimethylpropane
- 1-Chloro-2,2-dimethylpropane

82 of 100

172 PU_2016_380

Chlorine water acts as bleaching agent due to :-

- ClO_2
- HOCl
- HCl
- HF

83 of 100

281 PU_2016_380

The product of the reaction of RCOOH with $LiAlH_4$ followed by treatment with H_3O^+ is :-

- R-O-R
- R-CHO
- $R\text{-}CH_2\text{-}R$
- $R\text{-}CH_2OH$

84 of 100

290 PU_2016_380

The constancy of alkalinity/acidity of buffer solutions is due to:-

- Dissolution of the added compound
- Shielding of the ionization of the added compound
- Le Châtelier's principle
- Consumption of added compound in a competing reaction

85 of 100

284 PU_2016_380

The product of the reaction of $R_2C=O$ with RMgBr and then treated with water is:-

- R_3C-Br
- R_3COH
- RCHO
- R_2COOR

86 of 100

294 PU_2016_380

Removal of one or two electrons from the highest occupied MO of O_2 molecule leads to:-

- Does not alter the binding energy since the electrons are removed from non-bonding MOs.
- Increase of binding energy as electrons are removed from anti-bonding MOs
- Reduction of binding energy as electrons are removed from bonding MOs
- None of the above

87 of 100

177 PU_2016_380

The order of acidity is:-

- CH_3COOH >Phenol > CH_3CH_2OH
- CH_3COOH > CH_3CH_2OH > Phenol
- CH_3CH_2OH > Phenol > CH_3COOH
- Phenol > CH_3COOH > CH_3CH_2OH

88 of 100

280 PU_2016_380

The suitable reagent/reagents for the conversion of Ph-CH_3 to Ph-CHO is:-

- CrO_2Cl_2, CS_2, H_3O^+
- $Na_2Cr_2O_7$, OH^-
- $AlH(i\text{-}Bu)_2$, H_2O
- $KMnO_4$, H_3O^+

89 of 100

288 PU_2016_380

The condition for real gas deviate from the ideal gas behaviour is:-

- Smaller molecular size
- Strong intermolecular interactions
- High temperature
- Low pressure

90 of 100

191 PU_2016_380

The protecting power of lyophilic colloidal sol is expressed in terms of:-

- Coagulation value
- Gold number
- Critical micelle concentration
- Tyndall Scattering

91 of 100

170 PU_2016_380

Which among the following is metallic crystalline solid ?

- Si
- Kr
- W
- C

92 of 100

287 PU_2016_380

The rate of diffusion of CO molecule is the same as that of :-

- CH_4
- NH_3
- CO_2
- N_2

93 of 100

267 PU_2016_380

Which among the following is called laughing gas:-

- NO_2
- NO
- N_2O
- N_2O_3

94 of 100

182 PU_2016_380

The product/products of the reaction of $PhCOCH_3$ with NaOH and I_2 is:-

- $PhCO_2Na + CHI_3$
- $PhCO_2Na + CH_3I$
- $PhCO_2Na + CH_3OH$
- $PhCO_2CI_3$

95 of 100

165 PU_2016_380

H_2O is a liquid but H_2S is a gas because in H_2S there is:-

- no hydrogen bonding
- no van der Waals forces
- van der Waals forces
- hydrogen bonding

96 of 100

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The atomic number 100 belongs to:-

- Einstenium
- Mendelevium
- Lawrencium
- Fermium

97 of 100

269 PU_2016_380

The Haber process is used in the manufacture of :-

- NH_2 OH
- N_2 H_4
- N_2O
- NH_3

98 of 100

273 PU_2016_380

The oxidation number of cobalt in $K[Co(CO)_4]$ is:-

- +1
- 3
- 1
- +3

99 of 100

190 PU_2016_380

In Face-centred cubic close packed system, the number of immediate neighbours is :-

- Six
- Eight
- Twelve
- Nine

100 of 100

279 PU_2016_380

The sequence of electron pair repulsion in increasing order is (note: unshared pair = lone pair):-

- unshared pair-unshared pair < unshared pair-bonding pair< pair pair-bonding>
- bonding pair-bonding pair < unshared pair-bonding pair < unshared pair-unshared pair
- bonding pair-bonding pair< unshared pair-unshared pair< unshared pair-bonding pair
- unshared pair-bonding pair < pair pair-bonding pair-unshared unshared pair<>