Computer Based Examination System

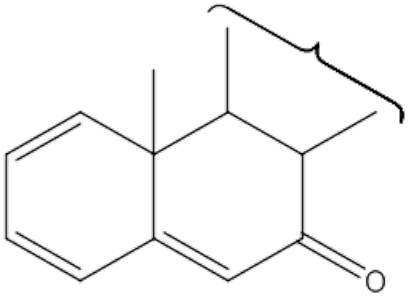
Exported On *	2021/04/13 12:18:17
Title *	Question Paper Answer Key
OES Exam *	GPSC13202013 Assistant Professors in Government College in Chemistry(Physical) Completed 2021-04-10

1

Question Description	A nucleus with chemical shift of 1 ppm has a frequency shift of 500 Hz from reference in an NMR instrument operating at 500 MHz, what will be the frequency shift with respect to reference in an instrument operating at 100 MHz
A	500 Hz
B	100 Hz
C	20 Hz
D	5 Hz
Correct Answer	B
Marks	1

2	**Question Description**	The ground state dipole moment of a molecule is 0.78D. The excited state dipole moment is 14D. Which of the statement will hold true?
	A	A solution of compound in cyclohexane will exhibit larger Stokes' shift than observed in a solution of compound in acetonitrile
	B	The molecule will always exhibit phosphorescence
	C	The wavelength of maximum emission of the compound in 3-methlypentane will be blue shifted with respect to solution of the same compound in water
	D	The fluorescence spectra of compound in highly viscous solvents will be blue shifted with respect to absorption spectra in the same solvent.
	Correct Answer	C
	Marks	1

3	**Question Description**	The rotational constant for two diatomic molecules AB and CD are 0.36 cm-1 and 5.76 cm-1 respectively. If the centrifugal distortion constant for CD is 16 times more than AB then vibrational wave number of the molecules can be predicted to be:
	A	AB=v; CD=4v
	B	AB=4v;CD=v
	C	AB=v;CD=16v
	D	AB=8v;CD=v
	Correct Answer	A
	Marks	1

4		
	Question Description	The expected position of the λ_{max} in the following compound is 
	A	244 nm
	B	349 nm
	C	305 nm
	D	360 nm
	Correct Answer	B
	Marks	1

5	**Question Description**	If the rotational spectrum of a gas is measured at 144K and 576K, what can be predicted about the population distribution among the rotational levels
	A	The most populated rotational level at 576K will be equal to that at 144K
	B	The most populated rotational level at 576K will be about sixteen times that of 144K
	C	The most populated rotational level at 576K will be about four times that of 144K
	D	The most populated rotational level at 576K will be about twice that of 144K
	Correct Answer	D
	Marks	1
6	**Question Description**	At 25 °C the $\lambda_0(H^+)=3.5\times10^{-2}$ S m^2mol^{-1} and $\lambda_0(OH^-)=2.0\times10^{-2}$ S m^2mol^{-1}. (Given $\kappa=5.5\times10^{-6}$ S m^{-1}. Determine the degree of dissociation of water)
	A	1.8×10^{-9}
	B	1.8×10^{-6}
	C	5.5×10^{-2}
	D	5.5×10^{-6}
	Correct Answer	A
	Marks	1

7	**Question Description**	Nitrogen has nuclear spin of 1. The nuclear magnetic resonance of nitrogen has, \
	A	1 line
	B	2 lines
	C	3 lines
	D	5 lines
	Correct Answer	C
	Marks	1

8	**Question Description**	Using the data below estimate the liquid junction potential for the cell at 300 K. $Ag_{(s)} \mid AgCl_{(s)} \mid NaCl_{(c1)} \parallel NaCl_{(c2)} \mid AgCl_{(s)} \mid Ag_{(s)}$ c_1=0.01 M, c_2=0.005 M; transference number of sodium ions and chloride ions are 0.40 and 0.60 respectively at 300 K. (Given log(5)=0.70; R=8.3 $JK^{-1}mol^{-1}$; F=96500 $Cmol^{-1}$; N_a=6x10^{23} mol^{-1} ; ln(x)=2.3log(x))
	A	+3.56 mV
	B	+8.30 mV
	C	-3.56 mV
	D	-1.55 mV
	Correct Answer	C
	Marks	1

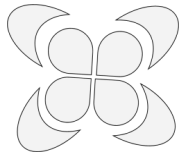
9	**Question Description**	A fuel cell is operated with methane and oxygen. A heat engine powered by fuel cell has T_h=900K and T_c=300 K. The standard enthalpy change of reaction for the reaction inside the fuel cell is -870 kJmol^{-1}. Calculate the work available when one mole of methane is burned in the heat engine.
	A	+580 kJ mol^{-1}
	B	+870 kJ mol^{-1}
	C	-580 kJ mol^{-1}
	D	-870 kJ mol^{-1}
	Correct Answer	A
	Marks	1
10	**Question Description**	One mole of an ideal gas is kept in a sealed cylindrical container of radius 10 dm and volume of 22.4 dm^3 maintained at a temperature of 300 K. The contents in the container are heated to a temperature of 900 K. At the elevated temperature the distance between the collisions will
	A	Increase by three times
	B	Decrease by three times
	C	Remain unchanged
	D	Cannot be predicted
	Correct Answer	C
	Marks	1

11	**Question Description**	During the industrial production of ethylene, the container is contaminated resulting in reduction constant of initiation step by four times. Which of the following statement will hold true?
	A	Chain length decreases by sixteen times
	B	Chain length increases by four times
	C	Chain length increases by two times
	D	Chain length remains unaffected
	Correct Answer	C
	Marks	1

12	**Question Description**	The rate constant of a chain polymerisation reaction involving radicals, initiated by an initiator is 0.05 units. If the initial concentrations of initiator and monomer solutions are is 0.01 M and 0.1 M then the rate of reaction and kinetic chain length of the polymer are
	A	$5x10^{-4}$ units and $5x10^{-2}$ units
	B	$5x10^{-5}$ units and $5x10^{-1}$ units
	C	$5x10^{-4}$ units and $5x10^{1}$ units
	D	$5x10^{-4}$ units and $5x10^{2}$ units
	Correct Answer	A
	Marks	1

13

Question Description	The total number of KE and PE terms in the complete Hamiltonian of CH_4 are. Given Carbon atom has 6 electrons, 6 protons and 6 neutrons and Hydrogen atom has 1electron and 1 proton
A	5,10
B	10,15
C	22,26
D	15,120
Correct Answer	D
Marks	1

14		
	Question Description	 T he contour plot of an orbital of hydrogenic system drawn on a YZ-plane is given below: The respective n, l and m values of the orbital drawn above
	A	3, 1, ± 1
	B	3, 2, ± 1
	C	4, 2, ± 1
	D	4, 2, ± 2
	Correct Answer	C
	Marks	1

15	**Question Description**	The Debye length of ionic cloud around a charge is minimum for
	A	1M $MgSO_4$
	B	1M Na_2SO_4
	C	1M $AlCl_3$
	D	1M $Fe_2(SO_4)_3$
	Correct Answer	B
	Marks	1

16	**Question Description**	A molecule has a stable triplet ground state. The excited state of this molecule is also a triplet. If molecule returns to ground state from its excited state by emitting a photon spontaneously, what is the phenomenon being exhibited by the molecule?
	A	Fluorescence
	B	Phosphorescence
	C	Chemiluminescence
	D	Incandescence
	Correct Answer	A
	Marks	1

17		
	Question Description	CO_2 has
	A	3 vibrational modes
	B	4 vibrational modes, 2 of which are degenerate
	C	Stretching modes only
	D	An IR active symmetric stretch
	Correct Answer	B
	Marks	1

18		
	Question Description	The thermal decomposition as well as photochemical decomposition of CH_3CHO results largely in the formation of CO and CH_4. In the rate of formation of methane, the order of reaction with respect to acetaldehyde in the two process is
	A	1/2 in both process
	B	3/2 in thermolysis and 1 in photolysis
	C	1 in thermolysis and 3/2 in photolysis
	D	1/2 in thermolysis and 3/2 in photolysis
	Correct Answer	B
	Marks	1

19

Question Description	Match the following

1	Hermitian operator	I	$\hat{H}\varphi = E\varphi$
2	Normalised Wavefunction	II	$\frac{\hbar}{i}\frac{\partial}{\partial x}$
3	Eigen value equation	III	$\frac{\sqrt{3}}{l^{3/2}}x \quad for\ x \in (0, l)$
4	Expectation value	IV	$\frac{\langle\varphi^*\|\hat{A}\|\varphi\rangle}{\langle\varphi^*\|\varphi\rangle}$

A	1-III, 2-I, 3-IV, 4-II
B	1-IV, 2-III, 3-I, 4-II
C	1-III, 2-II, 3-I, 4-IV
D	1-II, 2-III, 3-I, 4-IV
Correct Answer	D
Marks	1

20	**Question Description**	Consider the elementary reaction X+Y⇌Z. The affinity in this case is given by
	A	$A=\frac{\mu_x+\mu_y-\mu_z}{T}$
	B	$A=\frac{\mu_x-\mu_y-\mu_z}{T}$
	C	$A=\frac{\mu_x+\mu_y+\mu_z}{T}$
	D	$A=\frac{\mu_x+\mu_y}{T}$
	Correct Answer	A
	Marks	1
21	**Question Description**	The enthalpy for the unit mass for any system is
	A	$H = U + pV + S$
	B	$H = U + pV - S$
	C	$H = U + pV$
	D	None of these
	Correct Answer	C
	Marks	1

22

Question Description	The standard enthalpy change of formation and standard free energy change of formation of Ammonia gas at 300 K are -45.9 kJ/mol and -16.5 kJ/mol. If the standard enthalpy of formation is constant over the temperature range of 250 to 450 K. What is the standard free energy of formation of Ammonia gas at 400 K?
A	-6.7 kJ/mol
B	+6.7 kJ/mol
C	-37.3 kJ/mol
D	+37.3 kJ/mol
Correct Answer	A
Marks	1

23

Question Description	A one—dimensional harmonic oscillator of mass *m,* charge *q* and classical amplitude *a* is kept in a n electric field of strength *E* along*x*-axis. First order change in ground and first excited state are respectively,
A	0,$qEa/2$
B	0, qEa
C	0,0
D	qEa/α, qEa
Correct Answer	D
Marks	1

24	**Question Description**	The J_{max} for a rigid diatomic molecule for which at 300K, the rotational constant is 1.566 cm^{-1}, is
	A	4
	B	6
	C	8
	D	10
	Correct Answer	C
	Marks	1

25	**Question Description**	Which of the following statements does not hold true for Lindeman-Hinshelwood mechanism for unimolecular reaction?
	A	At very low pressures the reaction follows second order kinetics
	B	As the beginning of reaction, the reaction follows first order kinetics
	C	All steps of the proposed mechanism have molecularity of one
	D	At low concentration of reactants, a plot of 1/[effective rate constant] and 1/[Reactant] yields a straight line
	Correct Answer	C
	Marks	1

26

Question Description	The energy of C=O bond in carbonyl molecule is 365 kJ mol^{-1}. Which of the following sources will be able to dissociate the bond?
A	Hg lamp operating at 254 nm
B	Na lamp operating at 590 nm
C	Halogen lamp operating at 405 nm
D	UV laser operating at 375 nm
Correct Answer	A
Marks	1

27		
	Question Description	Consider the following polymerisation reaction. $$xHOOC-R-COOH+xHO-R^{'}-OH \rightarrow H\left[OOC-R-COO-R^{'}\right]_{x}OH+water$$ The above reaction is catalysed by adding acid catalyst. If it takes 30 minutes for the above reaction to be 50% complete, how much time will it take for the reaction to be 50% complete if the reaction is catalysed by acid. The ratio of alcohol and carboxylic acid remains same throughout the reaction and Assume that the same rate constant is achieved in presence of acid catalyst.
	A	10.00 Seconds
	B	13.33 Seconds
	C	16.67 Seconds
	D	20.00 Seconds
	Correct Answer	D
	Marks	1

28		
	Question Description	An electrochemical cell consists of a standard hydrogen electrode and a copper metal electrode. If you wish to construct a combination curve to show the cell potential varying with $[Cu^{2+}]$, what should you plot to obtain a straight line and slope?
	A	Voltage on ordinate and Cu concentration on abscissa and slope is +20 mV.
	B	Voltage on abscissa and Cu concentration on ordinate and slope is +30 mV.
	C	Voltage on ordinate and log of Cu concentration on abscissa and slope is +30 mV.
	D	Voltage on abscissa and log of Cu concentration on ordinate and slope is +20 mV.
	Correct Answer	C
	Marks	1

29		
	Question Description	In superconductors the perfect diamagnetic nature arises
	A	Orbital spin of electrons around the nuclei, induced by the external magnetic field
	B	Screening currents arising to oppose the external magnetic field
	C	Orientation of nuclear spins in the direction of external magnetic field
	D	Precession of nucleus and electrons around the external magnetic field
	Correct Answer	B
	Marks	1

30

Question Description	which of the following belongs to the C_{3V} point group
A	SO_3
B	BBr_3
C	NH_3
D	$AlCl_3$
Correct Answer	C
Marks	1

31

Question Description	The Eyring enthalpy parameter for a bimolecular gas phase reaction, whose Arrhenius parameter and Activation energy are $1.8x10^8$ $M^{-1}s^{-1}$ and 72 kJ mol^{-1} at 300 K, is
A	68.02 kJ mol^{-1}
B	69.51 kJ mol^{-1}
C	72.00 kJ mol^{-1}
D	74.49 kJ mol^{-1}
Correct Answer	A
Marks	1

32		
	Question Description	Which of the following crystal system has face-centring on all faces?
	A	Orthorhombic
	B	Tetragonal
	C	Rhombohedral
	D	Triclinic
	Correct Answer	A
	Marks	1

33		
	Question Description	The number of lines observed in the low resolution and high resolution NMR spectrum of acetone are respectively
	A	0,1
	B	1,0
	C	1,1
	D	1,2
	Correct Answer	C
	Marks	1

34	**Question Description**	The elements A and X form two types of compounds, AX_4 with tetrahedral geometry and AX_6 with octahedral geometry. If the AX bond length is the same in both molecules. Which of the following statement is true for the molecules?
	A	AX_4 has a larger moment of inertia than AX_6
	B	AX_4 has a smaller moment of inertia than AX_6
	C	AX_4 and AX_6 have equal moments of inertia
	D	AX_4 and AX_6 have moments of inertia whose magnitude is zero
	Correct Answer	B
	Marks	1

35	**Question Description**	The expected apparent mass of the metastable ion produce4d when m/z 77 decomposes by loss of acytelene to m/z 51 will be
	A	43.4
	B	33.4
	C	66.8
	D	51.0
	Correct Answer	B
	Marks	1

36

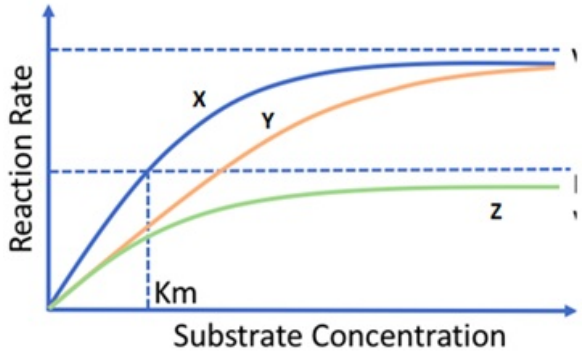
Question Description	The observed rate law for reaction between dihydrogen molecule and dibromine molecule is given below. $rate = \frac{k'[Br_2]^{1/2}[H_2]}{1 + k''[HBr]/[Br_2]}$ However, it is generally accepted that at the initial stages of reaction the order of reaction is 0.5 with respect to dibromine molecule. How can you rationalise the observation?
A	The initial concentration of H_2 is very large
B	The rate constant k′ is very small compared to k′′
C	The initial concentration of HBr is negligible
D	The initial concentration of Br_2 is catalytic
Correct Answer	C
Marks	1

37	**Question Description**	A bubble is expanded from a radius of 1 cm to 4 cm. If the surface tension of water is 70 N m^{-1}, then work done in increasing the size of the bubble is
	A	-2.64 J
	B	-1.32 J
	C	-26.4 kJ
	D	-13.2 kJ
	Correct Answer	A
	Marks	1

38	**Question Description**	A particle is placed in a one dimensional box of size L along x-axis, ($0<x<L$). Which of the following is true?
	A	In the ground state, the probability of finding the particle in the interval ($L/4$, $3L/4$) is half.
	B	In the first excited state, the probability of finding the particle in the interval ($L/4$, $3L/4$) is half. This also holds good for the states with n = 4, 6, 8...
	C	For an arbitrary state, the probability of finding the particle in the interval ($L/4$, $3L/4$) is half.
	D	In the ground state the particle has definite momentum.
	Correct Answer	C
	Marks	1

39

Question Description	The volume of a perfect gas of N atoms is doubled the energy being held constant. Change in entropy is,
A	$N \log 2$
B	$N^2 \log 2$
C	$N \log 1/2$
D	$N^2 \log ½$
Correct Answer	A
Marks	1

40		
	Question Description	The following graph is a schematic representation of effect of inhibitor in an enzyme catalysed reaction. Identify the phenomena A, B and C  **X** **Y Z**
	A	X=No Inhibition; Y=Competitive Inhibition; Z=Non-Competitive Inhibition
	B	X= Non-Competitive Inhibition; Y=Competitive Inhibition; Z=No Inhibition
	C	X= Competitive Inhibition; Y= No Inhibition; Z=Non-Competitive Inhibition
	D	X= Competitive Inhibition; Y= Non-Competitive Inhibition ; Z= No Inhibition
	Correct Answer	A
	Marks	1

41

Question Description	The wave function of an electron sticking to a positively charged ball is given by $\varphi = k e^{-r/x}$ What is the probability of finding a particle at $r = 0$ and $r = \infty$ within a small volume 5 pm^3.
A	0,0
B	0,k^2
C	5k^2,0
D	∞,0
Correct Answer	C
Marks	1

42

Question Description	Solutions of two salts A_2B_3 and C_2D_3 are mixed. During the chemical reaction a transition state is formed between the two trivalent cations. If the same reaction is performed in a solution whose ionic strength is creased by twenty-five times, the rate constant of reaction will
A	Increase
B	Decrease
C	Remain unchanged
D	The reaction will proceed in reverse direction
Correct Answer	A
Marks	1

43		
	Question Description	Photolysis of carbonyl compound in which intramolecular abstraction of Υ-H atom, followed by cleavage takes place is known as
	A	Norish type III process
	B	Norish type I process
	C	Norish type II process
	D	None of the above
	Correct Answer	C
	Marks	1

44		
	Question Description	A 5 mol % aqueous solution of NH_3 in water has a total vapour pressure of 80 Torr at 310 K. If the vapour pressure of pure water at this temperature is 50 torr, what is the total vapour pressure for 10 mol% solution of ammonia?
	A	100.0 Torr
	B	110.0 Torr
	C	130.0 Torr
	D	160.0 Torr
	Correct Answer	B
	Marks	1

45	**Question Description**	The external magnetic field produced in an NMR instrument is reduced to half of its initial value. How will the Larmor frequency be affected?
	A	Larmor frequency remains unchanged
	B	Larmor frequency is doubled
	C	Larmor frequency is halved
	D	Larmor frequency becomes zero
	Correct Answer	C
	Marks	1

46	**Question Description**	The number of degrees of vibrational freedom possessed by CH_4 is
	A	10
	B	6
	C	4
	D	9
	Correct Answer	D
	Marks	1

47

Question Description	How many NMR signals are found in cis-*dimethyl cyclopropane and transdiemthylcyclopropane.
A	2,3
B	3,4
C	1,2
D	8,10
Correct Answer	B
Marks	1

48

Question Description	If the chemical shift for an ^{13}C is zero, then the Larmor frequency of that atom with gyromagnetic ratio is $+6.7283x10^{7}$ $rads^{-1}T^{-1}$ in a magnetic field of 9.4 T is about
A	100 Hz
B	100 kHz
C	100 MHz
D	100 GHz
Correct Answer	C
Marks	1

49	**Question Description**	Zeeman effect is,
	A	The change in energy level of an atom when it is placed in uniform external field.
	B	The change in energy level of an atom when it is placed in non-uniform external field.
	C	The change in energy level of an atom when it is placed in external electric field.
	D	The change in energy level of an atom when it is placed in non-uniform external electric field.
	Correct Answer	A
	Marks	1

50	**Question Description**	What is the degeneracy of H atom in state n = 3?
	A	5
	B	7
	C	9
	D	18
	Correct Answer	C
	Marks	1

51

Comprehension	Read the following passage and answer the questions given below: It is very difficult to say how far Gandhi was influenced by Marx. He himself claimed that he had read Marx. He wrote: 'I have to reduce myself to the level of the poorest of the poor. That is what I have been trying to do for the last fifty years or more, and so I claim to be a foremost communist." The differences are clear on two points. First, while Gandhi rejected property as something antithetical to spiritual progress, Marx did not reject property as such, he merely rejected property based on exploitation and because it fosters inequality in society. Second major difference was around the problem of means. Though the entire tenor of Gandhi was against property, he too acquiesced in the institution, albeit reluctantly, by conceding one's right to earn property by lawful means.
Question Description	Gandhi's basic objection to property differed from that of Marx because unlike the latter, he saw it as being
A	the means of exploitation
B	the cause of social inequality
C	the hinderance to spiritual growth
D	earned by unlawful means
Correct Answer	C
Marks	1

52

Comprehension	Read the following passage and answer the questions given below: It is very difficult to say how far Gandhi was influenced by Marx. He himself claimed that he had read Marx. He wrote: 'I have to reduce myself to the level of the poorest of the poor. That is what I have been trying to do for the last fifty years or more, and so I claim to be a foremost communist." The differences are clear on two points. First, while Gandhi rejected property as something antithetical to spiritual progress, Marx did not reject property as such, he merely rejected property based on exploitation and because it fosters inequality in society. Second major difference was around the problem of means. Though the entire tenor of Gandhi was against property, he too acquiesced in the institution, albeit reluctantly, by conceding one's right to earn property by lawful means.
Question Description	Identify the word or phrase from the passage that comes close to "give in to" or "quietly accept".
A	albeit reluctantly
B	fosters
C	acquiesced
D	conceding
Correct Answer	C
Marks	1

53

Comprehension	Read the following passage and answer the questions given below: It is very difficult to say how far Gandhi was influenced by Marx. He himself claimed that he had read Marx. He wrote: 'I have to reduce myself to the level of the poorest of the poor. That is what I have been trying to do for the last fifty years or more, and so I claim to be a foremost communist." The differences are clear on two points. First, while Gandhi rejected property as something antithetical to spiritual progress, Marx did not reject property as such, he merely rejected property based on exploitation and because it fosters inequality in society. Second major difference was around the problem of means. Though the entire tenor of Gandhi was against property, he too acquiesced in the institution, albeit reluctantly, by conceding one's right to earn property by lawful means.
Question Description	Property being the means of exploitation and the basis for fostering inequality were the two criteria which defined Marx's ---------- to it.
A	perception
B	objection
C	obduration
D	reluctance
Correct Answer	B
Marks	1

54

Comprehension	Read the following passage and answer the questions given below: It is very difficult to say how far Gandhi was influenced by Marx. He himself claimed that he had read Marx. He wrote: 'I have to reduce myself to the level of the poorest of the poor. That is what I have been trying to do for the last fifty years or more, and so I claim to be a foremost communist." The differences are clear on two points. First, while Gandhi rejected property as something antithetical to spiritual progress, Marx did not reject property as such, he merely rejected property based on exploitation and because it fosters inequality in society. Second major difference was around the problem of means. Though the entire tenor of Gandhi was against property, he too acquiesced in the institution, albeit reluctantly, by conceding one's right to earn property by lawful means.
Question Description	Read the following statements and choose their logical cause-effect sequence apparent from the options given below: i. Subsequently Gandhi acquiesced in the institution, provided it was earned lawfully. ii. Marx did not reject property per se but as the basis for exploitation and inequality. iii. Gandhi had rejected property as antithetical to spiritual progress. iv. Gandhi had read Marx and claimed to be a foremost communist.
A	(iii); (iv); (ii); (i)
B	(iii); (ii); (i); (iv)
C	(iii); (ii); (iv); (i)
D	(iv); (iii); (ii); (i)
Correct Answer	A
Marks	1

55		
	Comprehension	Read the following passage and answer the questions given below: It is very difficult to say how far Gandhi was influenced by Marx. He himself claimed that he had read Marx. He wrote: 'I have to reduce myself to the level of the poorest of the poor. That is what I have been trying to do for the last fifty years or more, and so I claim to be a foremost communist." The differences are clear on two points. First, while Gandhi rejected property as something antithetical to spiritual progress, Marx did not reject property as such, he merely rejected property based on exploitation and because it fosters inequality in society. Second major difference was around the problem of means. Though the entire tenor of Gandhi was against property, he too acquiesced in the institution, albeit reluctantly, by conceding one's right to earn property by lawful means.
	Question Description	Match the words from the passage with their near synonyms, using the options given below: - 1. foster — (A) approach 2. antithetical — (B) nurture 3. concede — (C) hesitant 4. reluctant — (D) give in (E)opposed
	A	1-(B); 2- (E); 3- (D); 4- (A)
	B	1-(E); 2- (C); 3- (B); 4- (A)
	C	1-(D); 2- (A); 3- (B); 4- (C)
	D	1-(B); 2- (E); 3- (D); 4- (C)
	Correct Answer	D
	Marks	1

56		
	Question Description	What is the Orbital period of Moon?
	A	27 days
	B	37 days
	C	47 days
	D	57 days
	Correct Answer	A
	Marks	1

57		
	Question Description	Folk painting ‘MadhuBani’ is famous in which state?
	A	Punjab
	B	Uttar Pradesh
	C	Bihar
	D	Madhya Pradesh
	Correct Answer	C
	Marks	1

58		
	Question Description	Which planet is known as the Morning Star or the Evening Star?
	A	VENUS
	B	Jupiter
	C	Mars
	D	Saturn
	Correct Answer	A
	Marks	1

59		
	Question Description	Where is the Railway Staff College located?
	A	Pune
	B	Delhi
	C	Vadodara
	D	Allahabad
	Correct Answer	C
	Marks	1

60		
	Question Description	For galvanizing iron which of the following metals is used?
	A	Aluminium
	B	Copper
	C	Lead
	D	Zinc
	Correct Answer	D
	Marks	1

61		
	Question Description	Firdausi was
	A	a poet
	B	well known for his epic 'Shahnama'
	C	Both option A and B
	D	None of the above
	Correct Answer	C
	Marks	1

62	**Question Description**	The government of which state has recently launched a water ATM policy for urban areas?
	A	Rajasthan
	B	Haryana
	C	Gujarat
	D	Maharashtra
	Correct Answer	B
	Marks	1

63	**Question Description**	When the Halley’s Comet will be visible from Earth again?
	A	2061
	B	2051
	C	5041
	D	3071
	Correct Answer	A
	Marks	1

64		
	Question Description	Himalayan Mountaineering Institute is at
	A	Darjeeling
	B	Dehradun
	C	Marmago
	D	Dispur
	Correct Answer	A
	Marks	1

65		
	Question Description	Fathometer is used to measure
	A	Earthquakes
	B	Rainfall
	C	Ocean depth
	D	Sound intensity
	Correct Answer	C
	Marks	1

66	**Question Description**	For the series 24, 29, 31, 36, 38, 43, what pair of numbers should come next?
	A	45, 52
	B	50, 52
	C	45, 50
	D	46, 50
	Correct Answer	C
	Marks	1

67	**Question Description**	Statement I: The placements in the college have been increasing for the last three years Statement II: The college has put in extensive efforts in bringing the industries for college placements
	A	Statement II is the cause and statement I is its effect
	B	Statement I is the cause and statement II is its effect
	C	Both the statements are effects of independent causes
	D	Both the statements are independent causes
	Correct Answer	A
	Marks	1

68		
	Question Description	In a certain code, LEAF is written as MDBE. How is TREE written in that code
	A	UQDF
	B	UQFD
	C	GFSD
	D	UDQF
	Correct Answer	B
	Marks	1

69		
	Question Description	Praying is to temple as eating is to
	A	food
	B	restaurant
	C	Fitness
	D	Hunger
	Correct Answer	B
	Marks	1

70

Comprehension	**Answer the questions on the basis of the information given below.** Seven varsity basketball players (A, B, C, D, E, F, and G) are to be honoured at a special luncheon. The players will be seated on the dais in a row. A and G have to leave the luncheon early and so must be seated at the extreme right. B will receive the most valuable player's trophy and so must be in the centre to facilitate presentation. C and D are bitter rivals and therefore must be seated as far apart as possible.
Question Description	Which of the following cannot be seated at either end?
A	C
B	D
C	F
D	G
Correct Answer	C
Marks	1

71

Comprehension	**Answer the questions on the basis of the information given below.** Seven varsity basketball players (A, B, C, D, E, F, and G) are to be honoured at a special luncheon. The players will be seated on the dais in a row. A and G have to leave the luncheon early and so must be seated at the extreme right. B will receive the most valuable player's trophy and so must be in the centre to facilitate presentation. C and D are bitter rivals and therefore must be seated as far apart as possible.
Question Description	Which of the following pairs cannot be seated together?
A	B & D
B	C & F
C	D & G
D	E & A
Correct Answer	D
Marks	1

72

Comprehension	**Answer the questions on the basis of the information given below.** Seven varsity basketball players (A, B, C, D, E, F, and G) are to be honoured at a special luncheon. The players will be seated on the dais in a row. A and G have to leave the luncheon early and so must be seated at the extreme right. B will receive the most valuable player's trophy and so must be in the centre to facilitate presentation. C and D are bitter rivals and therefore must be seated as far apart as possible.
Question Description	Which of the following pairs cannot occupy the seats on either side of B?
A	F & D
B	D & E
C	E & G
D	C & F
Correct Answer	C
Marks	1

73

Comprehension	Read the following information and the sentence A,B,C,D and E given below it carefully and answer the question which follow: A host of foreign companies are in talks with the Indian government for selling B150, a tough short-haul plane ideal for connectivity of smaller towns which is lacking in India at present. A. B150 planes have not only low operating costs than competing planes like Cezana but also a much better track record in terms of safety and efficiency. B. The profit margin of road transport operators in the smaller towns connected by B150 planes has been reduced substantially as a majority of people prefer air transport over other means of transport. C. Smaller towns at present, are better connected by roads and railways as compared to flight services. D. B150 planes are capable of operating in sectors where large airlines cannot fly due to challenging conditions such as mist short runways etc. Such planes can also double up as cargo planes and charter flights for the rich and the elite. E. B150 planes need to operate in the existing airports, which are situated in bigger cities only and are poorly connected to the smaller cities.
Question Description	Which of the statements (A),(B),(C),(D)and (E) can be inferred from the facts/information given in the statement ? (An inference is something, which is not directly stated but can be inferred from the given facts.)
A	Only A
B	Only B
C	Only C
D	Both B and D
Correct Answer	C
Marks	1

74	**Comprehension**	Read the following information and the sentence A,B,C,D and E given below it carefully and answer the question which follow: A host of foreign companies are in talks with the Indian government for selling B150, a tough short-haul plane ideal for connectivity of smaller towns which is lacking in India at present. A. B150 planes have not only low operating costs than competing planes like Cezana but also a much better track record in terms of safety and efficiency. B. The profit margin of road transport operators in the smaller towns connected by B150 planes has been reduced substantially as a majority of people prefer air transport over other means of transport. C. Smaller towns at present, are better connected by roads and railways as compared to flight services. D. B150 planes are capable of operating in sectors where large airlines cannot fly due to challenging conditions such as mist short runways etc. Such planes can also double up as cargo planes and charter flights for the rich and the elite. E. B150 planes need to operate in the existing airports, which are situated in bigger cities only and are poorly connected to the smaller cities.
	Question Description	Which of the statements (A),(B),(C),(D)and (E) mentioned above would weaken the offer made by the foreign companies for selling B0150 planes to Indian government ?
	A	A
	B	B
	C	C
	D	E
	Correct Answer	D
	Marks	1
75		

Comprehension	Read the following information and the sentence A,B,C,D and E given below it carefully and answer the question which follow: A host of foreign companies are in talks with the Indian government for selling B150, a tough short-haul plane ideal for connectivity of smaller towns which is lacking in India at present. A. B150 planes have not only low operating costs than competing planes like Cezana but also a much better track record in terms of safety and efficiency. B. The profit margin of road transport operators in the smaller towns connected by B150 planes has been reduced substantially as a majority of people prefer air transport over other means of transport. C. Smaller towns at present, are better connected by roads and railways as compared to flight services. D. B150 planes are capable of operating in sectors where large airlines cannot fly due to challenging conditions such as mist short runways etc. Such planes can also double up as cargo planes and charter flights for the rich and the elite. E. B150 planes need to operate in the existing airports, which are situated in bigger cities only and are poorly connected to the smaller cities.
Question Description	Which of the statements (A),(B),(C),(D)and (E) mentioned above represents a possible consequence of the success of B150 planes in smaller cities ?
A	A
B	B
C	C
D	D
Correct Answer	B
Marks	1