

# CII – iPATE 1.0 (2020)

## Computer Based PAN India Examination

Category: GRADUATE ENGINEER

Engineering Discipline: BIOTECHNOLOGY

### Question Paper Structure

Question Nos.	Sections & Topics		Marks
1 to 20	Section I : Cognitive Abilities	<ul style="list-style-type: none"><li>Quantitative Aptitude</li><li>Analytical Reasoning</li><li>Data Interpretation</li><li>English Communication</li></ul>	20
21 to 40	Section II : Professional Abilities	<ul style="list-style-type: none"><li>Project Management</li><li>Health, Safety &amp; Risk Management</li><li>Environmental Laws</li><li>Social Responsibility &amp; Ethics</li><li>Finance &amp; Accounts</li><li>Legal, Contracts &amp; Arbitration</li></ul>	20
41 to 50	Section III (A) : Technical Abilities	Physics & Chemistry (10+2 level)	10
51 to 100	Section III (B) : Technical Abilities	Engineering Discipline	50
<b>TOTAL</b>			<b>100</b>

**NOTE:**

- Exam Duration: 3 Hours
- Total 100 no. of Questions of 1 Mark each with Negative Marking of ½ Mark for every wrong answer
- Questions (Section wise) and respective Answer Options shuffling at Candidates' terminal

Question No. 1	X, Y and Z are three participants in a kilometer race. If X can give Y a start of 40m and X can give Z a start of 64m, how many metres start can Y give Z?			
Answer Options	A) 20 mtr	B) 15 mtr	C) 25 mtr	D) 10 mtr
Right Answer	C			

Question No. 2	Two places A and B are 125km apart. Ram started from A to B and Raj from B to A at the same time. They met at a point 75km from A. Find the ratio of speeds of Ram & Raj.			
Answer Options	A) 3:2	B) 2:3	C) 1:3	D) 3:4
Right Answer	A			

Question No. 3	The length of a circular track is 800 m. Virat and Amresh started from the same point on the track and ran in opposite directions. Virat took 12 minutes to cover one kilometer while Amresh took only 9 minutes to cover the same distance. They kept running for 90 minutes. How many times did they cross each other?			
Answer Options	A) 10	B) 20	C) 21	D) 30
Right Answer	C			

Question No. 4	The marks scored by Prasoon Joshi in three subjects are in the ratio 4 : 5 : 6. Prasoon Joshi scored an overall aggregate of 60% in the exam. If the maximum marks in each subject are the same, in how many subjects did Prasoon Joshi score more than 70% marks?			
Answer Options	A) One	B) Two	C) Three	D) Zero
Right Answer	A			

Question No. 5	Meena scores 40% in an examination and after review, even though her score is increased by 50%, she fails by 35 marks. If her post-review score is increased by 20%, she will have 7 marks more than the passing score. The percentage score needed for passing the examination is			
Answer Options	A) 75	B) 80	C) 60	D) 70
Right Answer	D			

Question No. 6	Fill up the following series: 100, 50, 52, 26, 28, _____			
Answer Options	A) 30	B) 32	C) 14	D) 16
Right Answer	C			

Question No. 7	<b>The question is followed by three statements I, II, and III. Read the question and the statements carefully and choose your answer according to which set of the statement(s) is/are sufficient to answer the question.</b>			
	What is the present age of Rakesh?			
	I. The ratio of the ages of Ramesh and Rakesh, three years ago, was 4 : 5.			
	II. The ratio of the ages of Rajesh and Rakesh, after two years, will be 4 : 5.			
	III. Two years ago the ratio of the ages of Rajesh and Ramesh was 12 : 13.			
Answer Options	A)	B)	C)	D)
	I and II only	II and III only	I and III only	All I, II and III
Right Answer	D			

Question No. 8	<b>The question below consists of a question and three statements numbered I, II and III given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer:</b>			
	In a kilometre race, by how many meters Chandu beats Chand?			
	Statement I : In a kilometer race, Chandu beats Chandan by 100 meters.			
	Statement II : The respective ratio of the speed of Chandan and Chand is 4 : 3.			
	Statement III : In a kilometer race, Chandan beats Chand by 150 meters.			
Answer Options	A)	B)	C)	D)
	Either statement III alone or statements I and II together are sufficient	Only statement III is sufficient	Only statement I and II are sufficient	Only statement I, II, and III are sufficient
Right Answer	C			

Question No. 9	In the following question, there is a certain relationship between two given words on one side of:: and one word is given on another side of:: while another word is to be found from the given alternatives having the same relationship with this word as the words of the given pair bear. Choose the correct alternative.			
	particular : fussy :: _____ : subservient			
Answer Options	A)	B)	C)	D)
	meek	above	cranky	uptight
Right Answer	A			

Question No. 10	Pinky, who is Victor's daughter, say to Lucy, "Your Mother Rosy is the younger sister of my Father, who is the third child of Joseph." How is Joseph related to Lucy?			
Answer Options	A)	B)	C)	D)
	Father - In - Law	Father	Maternal Uncle	Grand Father
Right Answer	D			

Question No. 11	Attracted by the serenity of the evening, a friend and I lately went to one of the public walks near the city. Here we (1) _____ together for some time. Then my friend, stopping suddenly, (2) _____ by the elbow, and led me out of the public walk. I could perceive by the quickness of this (3) _____, and by his frequently looking behind, that he was attempting to avoid somebody who followed.			
Answer Options	A)	B)	C)	D)
	(1)sauntered, (2)trapped, (3)pace	(1)vamoosed, (2)relinquished, (3)hands	(1)dance, (2)caught, (3) gallop	(1)sauntered, (2)caught, (3)gallop
Right Answer	D			

Question No. 12	It was not surprising that my own countrymen should treat me so, for I had gained a (1) _____ of notoriety and popularly among them. Even for Englishmen I was individual and not merely one of the (2) _____ and, I imagine the fact that I had received my education in England, brought me (3) _____			
Answer Options	A)	B)	C)	D)
	(1) weight (2) collection (3) in juxtaposition with them	(1) ration (2) mass (3) nearer to them	(1) measure (2) dispersal (3) at a remote position	(1) measure (2) mass (3) nearer to them
Right Answer	D			

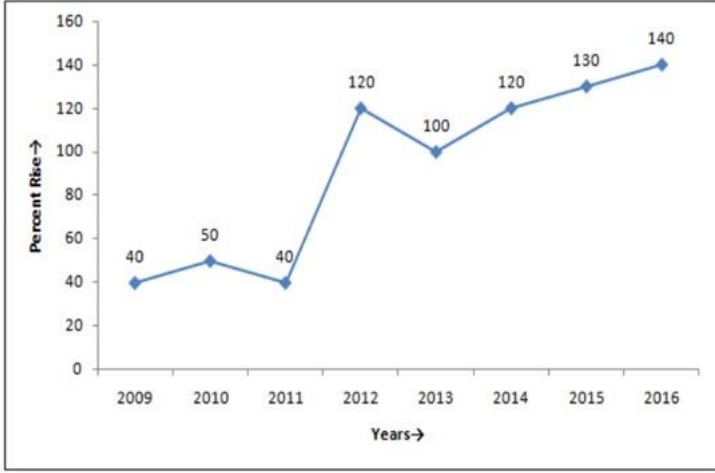
Question No. 13	<b>Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.</b>  A: A man on a bike had to ride on the pavement. B: When he tried to plunge onto the road, a car hit him. C: As the bus inched through the evening life, the traffic grew. D: There was no space on the road any more.			
Answer Options	A)	B)	C)	D)
	CBAD	DBCA	ADBC	CDAB
Right Answer	D			

Question No. 14	Select the Antonym of OFFHAND			
Answer Options	A)	B)	C)	D)
	accurate	universal	appropriate	premeditated
Right Answer	D			

Question No. 15	What is the synonym of SEIZE			
Answer Options	A)	B)	C)	D)
	Start	Release	Length	Grasp
Right Answer	D			

Question No. 16

The Line graph given below shows the percent rise in population from 2009 to 2016.  
For how many years the percent rise was more than 100%



Answer Options

A)	B)	C)	D)
4	3	2	5

Right Answer

A

Question No. 17

The following table gives the percentage of marks obtained by seven students in six different subjects in an examination. What are the average marks obtained by all the seven students in Physics? (rounded off to two digit after decimal)

**The Numbers in the Brackets give the Maximum Marks in Each Subject.**

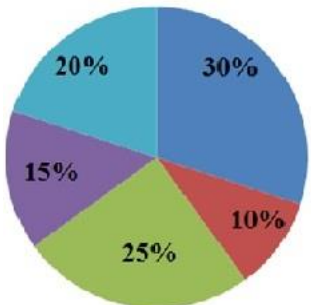
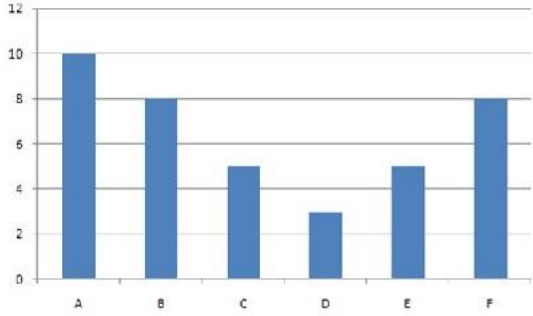
Student	Subject (Max. Marks)					
	Maths	Chemistry	Physics	Geography	History	Computer Science
	(150)	(130)	(120)	(100)	(60)	(40)
Ayush	90	50	90	60	70	80
Aman	100	80	80	40	80	70
Sajal	90	60	70	70	90	70
Rohit	80	65	80	80	60	60
Muskan	80	65	85	95	50	90
Tanvi	70	75	65	85	40	60
Tarun	65	35	50	77	80	80

Answer Options

A)	B)	C)	D)
58	89.14	74	80

Right Answer

D

<p>Question No. 18</p>	<p>The pie-chart shows sources of income for an NGO. The total income is Rs. 40 crore. The bar chart gives the expenditure incurred on various items A – Food for poor, B – Education to illiterate, C – Mid-day meal programme, D – General Expenses, E – Eye Camp expenses, F – Integrated Street Children Programme.(in Crores)</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>What Percentage of money is saved by the NGO?</p>			
<p>Answer Options</p>	<p>A) 0.035</p>	<p>B) 0.045</p>	<p>C) 0.025</p>	<p>D) 0.038</p>
<p>Right Answer</p>	<p>C</p>			

<p>Question No. 19</p>	<p>Read the following information carefully and answer the following question.</p> <p>i) 'A \$ B' means 'A is mother of B';                  ii) 'A # B' means 'A is father of B';                  iii) 'A @ B' means 'A is husband of B';                  iv) 'A % B' means 'A is daughter of B'.</p> <p>P @ Q \$ M # T indicates what relationship of P with T?</p>			
<p>Answer Options</p>	<p>A) Paternal grandmother</p>	<p>B) Maternal grandmother</p>	<p>C) Paternal grandfather</p>	<p>D) Maternal grandfather</p>
<p>Right Answer</p>	<p>C</p>			

<p>Question No. 20</p>	<p>A monkey starts climbing up a tree 20ft. tall. Each hour, it hops 3ft. and slips back 2ft. How much time would it take the monkey to reach the top?</p>			
<p>Answer Options</p>	<p>A) 21 hours</p>	<p>B) 12 hours</p>	<p>C) 18 hours</p>	<p>D) 15 hours</p>
<p>Right Answer</p>	<p>C</p>			

<p>Question No. 21</p>	<p>Gantt Chart is commonly used for _____</p>			
<p>Answer Options</p>	<p>A) Routing</p>	<p>B) Scheduling</p>	<p>C) Follow up</p>	<p>D) Inspection and quality control</p>
<p>Right Answer</p>	<p>B</p>			

Question No. 22	Consider the following features/factors: (i) Projects are of non-repetitive type, (ii) Time required need not be known, (iii) Events have been established for planning, (iv) Emphasis is given to activities of project. PERT is preferred for planning because of.....			
Answer Options	A)	B)	C)	D)
	(i), (ii) and (iv)	(ii), (iii) and (iv)	(i), (iii) and (iv)	(i), (ii) and (iii)
Right Answer	A			

Question No. 23	What is the Critical Path Method (CPM)			
Answer Options	A)	B)	C)	D)
	It is an improvement upon Bar Chart method	It provides a realistic approach to daily problems	It avoids delay which is common in Bar Chart	All the options
Right Answer	D			

Question No. 24	An activity has an early start(ES) of day 3, a late start(LS) of day 13, an early finish(EF) of day 9 and a late finish(LF) of day 19. The activity ____			
Answer Options	A)	B)	C)	D)
	Is on the Critical path	Has a Lag	Progressing well	Is not on the Critical path
Right Answer	D			

Question No. 25	The following extinguisher is suitable for cotton or other textile fire			
Answer Options	A)	B)	C)	D)
	Water	Soda acid	Foam	Dry chemicals
Right Answer	D			

Question No. 26	The following class of fire occur in electrical equipment			
Answer Options	A)	B)	C)	D)
	Class-A fires	Class-B fires	Class-C fires	All of the above
Right Answer	C			

Question No. 27	Which of the following is not a chemical-related health hazard?			
Answer Options	A)	B)	C)	D)
	Carcinogenicity	Reactivity	Corrosivity	Toxicity
Right Answer	B			

Question No. 28	You should wear eye, head, and face protection if you are working with which of the following tools?			
Answer Options	A)	B)	C)	D)
	Portable abrasive wheel tools	Electric tools	Pneumatic tools	Liquid fuel tools
Right Answer	C			

Question No. 29	BOD is measure of			
Answer Options	A)	B)	C)	D)
	The amount of oxygen consumed in the biological process	The utilization of organic substances by aerobic microorganisms	Respiratory needs of biological community	None of the above
Right Answer	A			

Question No. 30	Smoke + fog is called as			
Answer Options	A)	B)	C)	D)
	Soeg	smog	Both (A) and (B)	None of the above
Right Answer	B			

Question No. 31	A Company or organization can go to ISO 14000 certificate provided it has an ongoing environmental management system in operation for at least			
Answer Options	A)	B)	C)	D)
	3 months	6 months	1 year	5 years
Right Answer	B			

Question No. 32	Which statement is true?			
Answer Options	A)	B)	C)	D)
	Walton writes that business ethics is related with truth and justice	A businessman who follows unethical conduct in business should be socially boycotted by the people	Government in the country has enacted various laws, rule and regulations under the provisions of which the business is bound to act honestly	All of the above
Right Answer	D			



Question No. 33	Which is the basic principle of ethos for management?			
Answer Options	A)	B)	C)	D)
	Co-operation is powerful instrument for team work and success in any enterprise involving collective work	Holistic approach indicating unity between the Divine, Individual Self and the Universe	Immense potential energy and talents for perfection as human being has the spirit within his heart	All of the above
Right Answer	D			

Question No. 34	The concept of international social responsibility is the expectation that MNCs concern themselves about _____ effects of their decisions regarding activities in other countries.			
Answer Options	A)	B)	C)	D)
	philosophical	competitive	environmental	social and economic
Right Answer	D			

Question No. 35	Net working Capital refers to			
Answer Options	A)	B)	C)	D)
	Current assets less current liabilities	Total assets less total liabilities	Current assets less inventories	Total current assets
Right Answer	A			

Question No. 36	Non-cash items refer to			
Answer Options	A)	B)	C)	D)
	The credit sales of a firm	The accounts payable of a firm	Expenses charged against revenues that do not directly affect cash flow	All accounts on the balance sheet other than cash on hand
Right Answer	D			

Question No. 37	The factor, which is largely considered in making or buying decisions			
Answer Options	A)	B)	C)	D)
	Quality Suppliers	Dependability of Suppliers	Production irrelevancy	Both A & B
Right Answer	D			

Question No. 38	Which of the following model law was used by the Indian Arbitration & Conciliation Act,1996			
Answer Options	A)	B)	C)	D)
	Indian Constitution	Guideline of Supreme Court	European commercial Arbitration procedure	UNICITRAL
Right Answer	D			

Question No. 39	An arbitral award made under Arbitration & Conciliation Act,1996 shall be considered as a _____			
Answer Options	A)	B)	C)	D)
	General award	International award	Domestic award	Foreign award
Right Answer	C			

Question No. 40	Which level of management is responsible for implementing programs that are intended to carry out the broader objectives of an organization set by management			
Answer Options	A)	B)	C)	D)
	Supervisory managers	Middle managers	First level managers	Financial managers
Right Answer	B			

Question No. 41	The rate at which electrical energy is used may be measured in:			
Answer Options	A)	B)	C)	D)
	watt/second	watt second	watt	kilowatt-hour
Right Answer	C			

Question No. 42	Radio waves are readily diffracted around buildings whereas light waves are negligibly diffracted around buildings. This is because radio waves:			
Answer Options	A)	B)	C)	D)
	are plane polarized	have much longer wavelengths than light waves	have much shorter wavelengths than light waves	are nearly monochromatic (single frequency)
Right Answer	B			

Question No. 43	An ideal gas expands into a vacuum in a rigid vessel. As a result there is:			
Answer Options	A)	B)	C)	D)
	a change in entropy	a change in temperature	a change in phase	an increase of pressure
Right Answer	A			

Question No. 44	A heat engine:			
Answer Options	A)	B)	C)	D)
	converts heat input to an equivalent amount of work	converts work to an equivalent amount of heat	takes heat in, does work, and loses energy as heat	uses positive work done on the system to transfer heat from a low temperature reservoir to a high temperature reservoir
Right Answer	C			

Question No. 45	The coefficient of kinetic friction:			
Answer Options	A)	B)	C)	D)
	is in the direction of the frictional force	is in the direction of the normal force	is the ratio of force to area	None of the above
Right Answer	D			

Question No. 46	Which of the following is a crystalline solid?			
Answer Options	A)	B)	C)	D)
	Tar	Butter	Glass	Common salt
Right Answer	D			

Question No. 47	Which of the following are physical changes? (i) Melting of iron metal (ii) Rusting of iron (iii) Bending of an iron rod (iv) Drawing a wire of iron metal			
Answer Options	A)	B)	C)	D)
	(i), (ii) and (iii)	(i), (ii) and (iv)	(i), (iii) and (iv)	(ii), (iii) and (iv)
Right Answer	C			

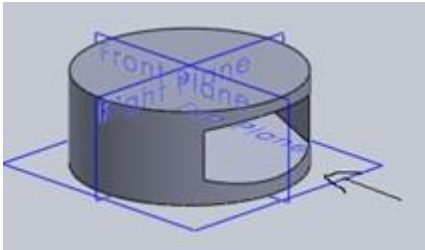
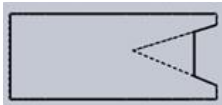

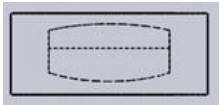
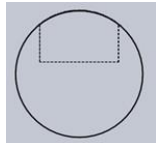
Question No. 48	The monomers of Buna-S rubber are			
Answer Options	A)	B)	C)	D)
	styrene and butadiene	isoprene and butadiene	vinyl chloride and sulphur	butadiene
Right Answer	A			

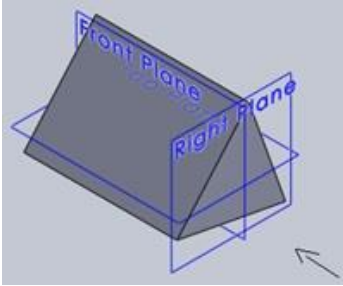
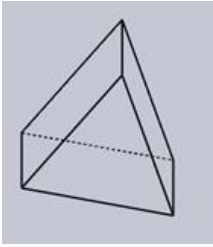
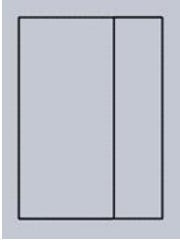
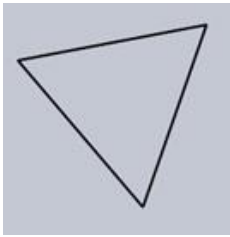
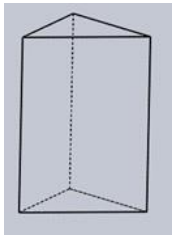
Question No. 49	Equal masses of ethane and hydrogen are mixed in any empty container at 25°C. The fraction of total pressure exerted by hydrogen is			
Answer Options	A)	B)	C)	D)
	1:2	1:1	1:16	15:16
Right Answer	D			

Question No. 50	n-propyl bromide on treating with alcoholic KOH produces			
Answer Options	A)	B)	C)	D)
	propyne	propene	propane	propanol
Right Answer	B			

Question No. 51	When a solid completely penetrates another solid, there will be two lines of intersection. These lines are called _____			
Answer Options	A)	B)	C)	D)
	line of interpenetration	conconcyclic curves of lines	hidden lines	inside line
Right Answer	A			

Question No. 52	Drawing straight lines on both the surfaces of solids and then pointing the points where they intersect and drawing lines which forms the line of intersection this process of finding the line of intersection is termed as _____ method.			
Answer Options	A)	B)	C)	D)
	assumption	line	removing material	cutting- plane
Right Answer	B			

Question No. 53	Identify the back view for the below cylinder.			
				
Answer Options	A)	B)	C)	D)
				
Right Answer	C			

<p>Question No. 54</p>	<p>Identify the front view from the isometric view for the below-given prism.</p> 			
<p>Answer Options</p>	<p>A)</p> 	<p>B)</p> 	<p>C)</p> 	<p>D)</p> 
<p>Right Answer</p>	<p>C</p>			

<p>Question No. 55</p>	<p>The perspectives of concentric circles are not concentric _____</p>			
<p>Answer Options</p>	<p>A) circles</p>	<p>B) ellipses</p>	<p>C) spheres</p>	<p>D) ellipsoids</p>
<p>Right Answer</p>	<p>B</p>			

<p>Question No. 56</p>	<p>In <math>500 \times g</math>, what does <math>g</math> represent in accordance to centrifugation?</p>			
<p>Answer Options</p>	<p>A) Gravitational force</p>	<p>B) Centrifugal force is 500 times greater than earthly gravitational force</p>	<p>C) Centrifugal force is 500 times less than earthly gravitational force</p>	<p>D) Centrifugal force is 500 times same as that of earthly gravitational force</p>
<p>Right Answer</p>	<p>B</p>			

<p>Question No. 57</p>	<p>Which of the following is not a type of centrifugation?</p>			
<p>Answer Options</p>	<p>A) Hydro cyclone</p>	<p>B) Tubular centrifuge</p>	<p>C) Microfiltration</p>	<p>D) Disk stack separator</p>
<p>Right Answer</p>	<p>C</p>			

Question No. 58	At what speed do you centrifuge blood?			
Answer Options	A)	B)	C)	D)
	2200-2500 RPM	3000-3200 RPM	1000-1500 RPM	4000 RPM
Right Answer	A			

Question No. 59	Which type of mechanism is applicable to chromatography?			
Answer Options	A)	B)	C)	D)
	Absorption and Desorption	Adsorption and Absorption	Adsorption and Desorption	Adsorption and Diffusion
Right Answer	C			

Question No. 60	Which of the following condition is of reverse phase chromatography?			
Answer Options	A)	B)	C)	D)
	The mobile phase is non-polar and stationary phase is polar	The mobile phase is polar and stationary phase is non-polar	Both the mobile phase and stationary phase are organic	Both the mobile phase and stationary phase are inorganic
Right Answer	B			

Question No. 61	Which type of chromatography depends on the principle of size of particles?			
Answer Options	A)	B)	C)	D)
	Affinity chromatography	Gel- filtration chromatography	Ion- exchange chromatography	Multimodal chromatography
Right Answer	B			

Question No. 62	According to the small size of the particle, which type of chromatographic separation is applicable?			
Answer Options	A)	B)	C)	D)
	High- performance liquid chromatography (HPLC)	Fast protein liquid chromatography (FPLC)	Gel chromatography	Paper chromatography
Right Answer	A			

Question No. 63	The visual output of chromatography is called?			
Answer Options	A)	B)	C)	D)
	Chromatograph	Chromatogram	Electropherogram	Autoradiogram
Right Answer	B			

Question No. 64	Which of the following is an upstream process?			
Answer Options	A)	B)	C)	D)
	Product recovery	Product purification	Media formulation	Cell lysis
Right Answer	C			

Question No. 65	Which of the following is a downstream process?			
Answer Options	A)	B)	C)	D)
	Product recovery	Screening	Media formulation	Sterilization of media
Right Answer	A			

Question No. 66	Which of the following is the characteristics of a normal cell?			
Answer Options	A)	B)	C)	D)
	Anchorage independent	Continuous cell lines	Dependent on external growth factor	No contact inhibition
Right Answer	C			

Question No. 67	Name the cell line of the human embryonic lung?			
Answer Options	A)	B)	C)	D)
	HeLa	WISH	L	MRC-5
Right Answer	D			

Question No. 68	Which of the following is NOT the part of growth medium for animal culture?			
Answer Options	A)	B)	C)	D)
	Starch	Serum	Carbon source	Inorganic salts
Right Answer	A			

Question No. 69	Which of the following is NOT the major function of the serum?			
Answer Options	A)	B)	C)	D)
	Promotion of tuber and bulb formation	Stimulate cell growth	Enhance cell attachment	Provide transport proteins
Right Answer	A			

Question No. 70	Protein folding is a process in which a polypeptide folds in to _____			
Answer Options	A)	B)	C)	D)
	2-D structure	Globular form	3-D structure	Linear form
Right Answer	C			

Question No. 71	Which of the following is NOT an example of signal transduction? a) A molecule found in blood binds to a protein in a shark's olfactory cells. A signal is sent to the brain. b) Cow's milk contains growth hormones. Upon receiving these hormones, a baby cow's cells grow and divide. c) A cell uses the energy for a molecule of glucose to drive other reactions.			
Answer Options	A)	B)	C)	D)
	a	b and c	c	a and c
Right Answer	C			

Question No. 72	How many ways are there in reading the code of every strand of genetic material ?			
Answer Options	A)	B)	C)	D)
	1	2	3	6
Right Answer	C			

Question No. 73	Which of the following is not an essential amino acid ?			
Answer Options	A)	B)	C)	D)
	Valine	Leucine	Methionine	Glycine
Right Answer	D			

Question No. 74	In linkage maps, the distance between markers are measured by calculating which of the following ?			
Answer Options	A)	B)	C)	D)
	Mutation frequency	Recombination frequency	Codon number	Nucleotide number
Right Answer	B			



Question No. 75	How many alleles are possible at an SNP?			
Answer Options	A)	B)	C)	D)
	1	2	3	4
Right Answer	D			

Question No. 76	Fragile X Disease causing alleles have more than _____ CGG repeats.			
Answer Options	A)	B)	C)	D)
	2	20	200	2000
Right Answer	C			

Question No. 77	Which of the following information is not obtained by Southern hybridization ?			
Answer Options	A)	B)	C)	D)
	Presence of mRNA/protein produced by transgene	Number of sites of transgene integration per genome	Both A and B	Confirmation of integration of transgene
Right Answer	A			

Question No. 78	Which of the following organisms were used in Hershey Chase experiment to prove DNA as the genetic material ?			
Answer Options	A)	B)	C)	D)
	E. coli and $\lambda$ phage	E. coli and T <sub>2</sub> phage	E. coli and T <sub>4</sub> phage	E. coli and T <sub>7</sub> phage
Right Answer	B			

Question No. 79	Prokaryotic DNA polymerase I performs which of the following functions ?			
Answer Options	A)	B)	C)	D)
	DNA replication and DNA repair	DNA replication and DNA recombination	DNA repair and DNA recombination	All of the above
Right Answer	A			

Question No. 80	<p><b>Problem (P):</b> The major problem in the use of therapeutic oligonucleotides concerns their delivery to the target tissue as their uptake by cells is rather poor.</p> <p><b>Solution (S):</b> Efforts are being made to use liposomes for efficient tissue specific delivery.</p>			
Answer Options	A)	B)	C)	D)
	Only P is correct	Only S is correct	Both P and S are correct, but S is not the correct solution of P	Both P and S are correct, but S seems to be the correct solution of P
Right Answer	D			

Question No. 81	The S1 nuclease is isolated from_____.			
Answer Options	A)	B)	C)	D)
	Escherichia coli	Arabidopsis thaliana	Aspergillus oryzae	Vigna radiata
Right Answer	C			

Question No. 82	A good vector has at least _____ marker genes.			
Answer Options	A)	B)	C)	D)
	One	Two	Three	Four
Right Answer	B			

Question No. 83	Which of the following is used for multiplication of bacterial cells ?			
Answer Options	A)	B)	C)	D)
	Gamborg medium	Jensson medium	Luria-Bertani medium	Murashige -Skoog medium
Right Answer	C			

Question No. 84	The recognition sequence of six cutter restriction endonuclease is expected to occur at distance of how many nucleotides ?			
Answer Options	A)	B)	C)	D)
	1024	2048	4096	8188
Right Answer	C			

Question No. 85	After completion of n cycle, the amplicon copy number becomes which of the following ?			
Answer Options	A)	B)	C)	D)
	$n/2$	$n$	$n^2$	$2^n$
Right Answer	D			

Question No. 86	Which of the following techniques can be used for minimizing pollen-mediated gene flow from transgenic varieties of crops ? I. Gene silencing II. Terminator technology III. Male sterility IV. Integration of transgene into the chloroplast genome			
Answer Options	A)	B)	C)	D)
	I, II, III	II, III, IV	I, III, IV	I, II, IV
Right Answer	B			

Question No. 87	Match the columns A and B and select the correct option.			
	<b>Column A</b>	<b>Column B</b>		
	a. Auxin	1. Fruit ripening		
	b. ABA	2. Cell division		
	c. Ethylene	3. Apical dominance		
	d. GA3	4. Shoot elongation		
	e. Cytokinin	5. Stress hormone		
Answer Options	A)	B)	C)	D)
	a3, b5, c1, d4, e2	a4, b5, c2, d3, e1	a2, b4, c1, d5, e3	a5, b3, c2, d1, e4
Right Answer	A			

Question No. 88	Somaclonal variation generally serves the same purpose as which of the following ?			
Answer Options	A)	B)	C)	D)
	Backcross breeding	Analytical breeding	Hybrid sorting	Mutation breeding
Right Answer	D			

Question No. 89	For long term storage of germplasm, which of the following is used ?			
Answer Options	A)	B)	C)	D)
	Dry ice	Liquid oxygen	Liquid nitrogen	Mineral oil
Right Answer	C			

Question No. 90	In micropropagation in vitro hardening is achieved by which of the following?			
Answer Options	A)	B)	C)	D)
	Cooling culture vessels at bottoms	Use of Pseudomonas culture	PEG in the medium	All of the above
Right Answer	D			

Question No. 91	Certain biochemicals are produced by specialized cells present in organized structures. Which of the following culture systems will be useful for production of such compounds ?			
Answer Options	A)	B)	C)	D)
	Suspension cultures	Callus cultures	Organ cultures	Immobilized cell cultures
Right Answer	C			

Question No. 92	Which of the following stresses are known to promote androgenesis in plant tissue culture? I. ABA II. Glutamine and sugar starvation III. Cold treatment IV. Heat treatment			
Answer Options	A)	B)	C)	D)
	I, II, III	II, III, IV	I, III, IV	I, II, III, IV
Right Answer	D			

Question No. 93	Modification in flower color in rose, petunia, carnation, has been achieved by which of the following ?			
Answer Options	A)	B)	C)	D)
	Gene disruption technology	Suppression of the endogenous genes of chalcone synthase	Over expression of the gene encoding phytochrome A	Alteration of the cytokinin : auxin ratio by introducing and expressing specific transgenes
Right Answer	B			

Question No. 94	Which of the following yields highly purified enzymes in a single step?			
Answer Options	A)	B)	C)	D)
	Ion exchange chromatography	Affinity chromatography	Gel filtration	Both A and B
Right Answer	B			

Question No. 95	Match the columns A and B and select the correct option. <b>Column A</b> <b>Column B</b> a. Rennet                              1. Removal of dirt b. Papain                              2. Confectionery c. Serine protease                  3. Cheese d. Strptokinase                      4. Blood clots e. Invertase                          5. Meat			
Answer Options	A)	B)	C)	D)
	a3, b5, c1, d4, e2	a4, b5, c2, d3, e1	a2, b4, c1, d5, e3	a5, b3, c2, d1, e4
Right Answer	A			

Question No. 96	Commercial cellulase is obtained from which of the following ?			
Answer Options	A)	B)	C)	D)
	Mucor miehei	Bacillus amyloliquefaciens	Trichoderma reesei	Streptomyces sp.
Right Answer	C			

Question No. 97	Which of the following protective agents reduces the detrimental effects of lyophilization ?			
Answer Options	A)	B)	C)	D)
	Skimmed milk	Salt	Sucrose	Both B and C
Right Answer	D			

Question No. 98	Column A lists some compounds while column B lists the microorganisms needed to produce them. Match the columns and select the correct option. <b>Column A</b> a. a-amylase b. Single cell protein c. Gluconic acid d. Lactic acid e. Copper sulphate <b>Column B</b> 1. Penicillium purpurogenum 2. Thiobacillus ferrooxidase 3. Bacillus amyloliquefaciens 4. Lactobacillus bulgaricus 5. Methylophilus methylotrophus			
Answer Options	A)	B)	C)	D)
	a2, b4, c1, d5, e3	a5, b3, c2, d1, e4	a3, b5, c1, d4, e2	a4, b5, c2, d3, e1
Right Answer	C			

Question No. 99	Which of the following is based on chemical interaction between the carrier and the product molecules ?			
Answer Options	A)	B)	C)	D)
	Covalent chromatography	Gel filtration	Group specific affinity chromatography	Both A and C
Right Answer	D			

Question No. 100	In terms of process requirements, bioreactors are of which of the following types? I. Aerobic bioreactors II. Anaerobic bioreactors III. Solid state bioreactors IV. Immobilized cell bioreactors			
Answer Options	A)	B)	C)	D)
	I, II, III	II, III, IV	I, III, IV	I, II, III, IV
Right Answer	D			