Paper Code No: M75

ENTRANCE EXAMINATION - 2021 - 22 Question Booklet No. SET-C

SSF JAMIA MILLIA ISLAMIA **New Delhi**

Roll No.

M751909

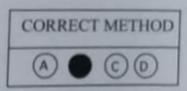
Signature of Invigilator

Total Marks: 100

Time: 1 Hour 30 Minutes

Instructions to Candidates

- Do not write your name or put any other mark of identification anywhere in the OMR Response 1. Sheet. IF ANY MARK OF IDENTIFICATIONS IS DISCOVERED ANYWHERE IN OMR RESPONSE SHEET, the OMR sheet will be cancelled, and will not be evaluated. 2.
- This Question Booklet contains the cover page and a total of 100 Multiple Choice Questions of 1 3.
- Space for rough work has been provided at the beginning and end. Available space on each page may also be used for rough work.
- There is negative marking in Multiple Choice Questions. For each wrong answer, 0.25 marks will be 5.
- USE/POSSESSION OF ELECTRONIC GADGETS LIKE MOBILE PHONE, iPhone, iPad, pager ETC. is strictly PROHIBITED.
- Candidate should check the serial order of questions at the beginning of the test. If any question is 6. found missing in the serial order, it should be immediately brought to the notice of the Invigilator. No pages should be torn out from this question booklet. 7.
- Answers must be marked in the OMR Response sheet which is provided separately. OMR Response sheet must be handed over to the invigilator before you leave the seat.
- The OMR Response sheet should not be folded or wrinkled. The folded or wrinkled OMR/Response 8. Sheet will not be evaluated.
- Write your Roll Number in the appropriate space (above) and on the OMR Response Sheet. Any 9. other details, if asked for, should be written only in the space provided.
- There are four options to each question marked A, B, C and D. Select one of the most appropriate 10. options and fill up the corresponding oval/circle in the OMR Response Sheet provided to you. The correct procedure for filling up the OMR Response Sheet is mentioned below.



WRONG METHODS A D C D A O C D A

Phase contrast microscopy exploits differences in 1. A. Protein content of an object refractive index of different parts of an object B. C. lipid content of membranes in an object differential staining of various parts of cell D. SSF JAMIA MILLIA ISLAMIA Which ecological pyramid is always upright? Pyramid of food B. A. Pyramid of number C. Pyramid of biomass D. Pyramid of energy Which class of enzymes catalyze removal of groups through formation of double bond? Hydrolases B. Lyases C. Transferases Ligases D. Besides oxygen, hemoglobin also binds to 4. Carbon monoxide Carbon dioxide B. C. Nitric oxide All the above D. Which one is a non-reducing sugar? B. fructose sucrose D. lactose C. ribose

		type of inhibition both	Km and V	max decreases
	A.	Competitive	В.	Uncompetitive
	C.	Non-competitive	D.	Allosteric inhibition
7.	Pol	ycistronic mRNA encodes		
	A.	several mRNAs	В.	several gences
	C.	several polypeptides	D.	homopolysaccharides
		SSF JAMIA MILLIA ISLAM New Delhi	IIA	
8.	Iden	ntify an antifungal agent		
	A.	Amphotericin B	B.	Tetrecyclin
	C.	Streptomycin	D.	Rifampicin
9.	Whi	ch DNA remains most conse	erved ?	
	A.	Mitochondrial DNA		
	В.	Chloroplast DNA		
	C.	Ribosomal DNA		
	D.	DNA sequences that code	for tRNA	
10.	In ea	rth's early atmosphere which	gas was p	re-dominant?
	A.	Oxygen	В.	Carbon dioxide
	C.	Argon	D.	Nitrogen

11.	Whic	h of the following does not act	via G-	Protein coupled secondary messen
	Syste			
	A.	Aldosterone	В.	Acetylcholine
	C.	Epinephrine	D.	Histamine
		SSF JAMIA MILLIA ISLAMIA New Delhi		
12.	Core	proteins of GAP junctions chan	nels ar	re:
	A.	Clathrin	В.	Cadherin
	C.	Connexin	D.	Calcineurin
13.	In w	hich technique separation is base	ed on o	charge
	A.	Gel Electrophoresis	В.	Autoradiography
	C.	Photoreactivation	D.	Blotting
14.	Ider	ntify enzymes that recognize and	cleave	specific DNA sequences
	A.	Dam Methylase	В.	Restriction Endonuclease
	C.	Exopeptidase	D.	DNA hydrolases
15.	Lev	el of Series-3 prostaglandins der	ends u	ipon intake of
	Α.	Linolenic acid	B.	Linoleic acid
	C.	1	D.	Stearic acid

16.	Arach	idonate has 20 carbon atoms wit	h	
	Λ.	2 double bonds	В.	3 double bonds
	C.	4 double bonds	D.	8 double bonds
		SSF JAM	IA MILI New De	LIA ISLAMIA
17.	Whic	h of the following gives most en		
		Nucleotides	В.	Fats
	C.	carbohydrates	D.	proteins
18.	In de	naturation of proteins, which bo	nd is n	ot broken?
	A.	Disulphide bond	В.	Peptide bond
	C.	Hydrogen bond	D.	ion-pairs
19.	Ident	ify four carbon monosaccharide		
	A.	Erythrose	В.	Xylulose
	C.	Xylose	D.	deoxyglutose
20.	Two	sulphur containing amino acids	are	
	Α.	Ser and Cys	В.	Thr and Ser
	C.	Cys and Met	D.	Cys and Thr

21.	Whic	h one is not an intermediate o	f glycoly	tic pathway?
	A.	oxaloacetate	В.	glyceraldehyde 3-P
	C.	fructose 6-P	D,	phospho-enolpyruvate
		SSF JAMIA MILLIA ISLAMI. New Delhi	COLUMN TO SERVICE STATE OF THE PERSON STATE OF	
22.	Whic	ch enzyme is unique to glucor	neogenesi	is?
	A.	PFK-1	В.	FBPase-1
	C.	Enolase	D.	Pyruvate kinase
23.	Hov	v many C02 are released in or	ne pass o	f TCA cycle
	A.	2	В.	3
	C.	4	D.	6
24.	Gly	cogenin is associated with		
	A.	synthesis of proteins		
	В.	synthesis of glycogen		
	C.	Degradation of glycogen		
	D.	synthesis of glycerophosp	holipids	
25.	Wh	ich of the following is key p	art of gar	nglioside?
	Α.	mannose	В	and the same of th
	C.	sialic acid	D	. Lactic acid

26.	Tran	nsketolase is intimately associate		
	A.	glycolytic pathway		
	C.	TCA cycle	B. D.	HMP pathway Glyoxylate cycle
27.	Whi	ch statement is false?		
	A.	Enzymes are usually proteins		
	B.	Enzymes are specific		
	C.	Enzymes provide activation e	nerov	for reaction
	D.	Enzymes may be used several	times	for a specific reaction
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28.	Whi	ch of the following is not an exa		of inborn error of metabolism?
	A.	Phenylketonuria	B.	
	C.	Tuberculosis	D.	Cori's disease
29.	Pant	othenic acid is part of which co-	-enzyn	ne
	A.	Coenzyme-A	B.	Methylcobalamine
	C.	Biotinyllysine	D.	Tetrahydrofolate
30.	Most	t prolific aflatoxin producer is		
	A.	Aspergillus flavus	B.	Aspergillus candidus
	C.	Aspergillus niger	D.	Aspergillus nidulans
		[8]		Entrance Examination – 2021 - 22

- 31. Facultative organism is one that
 - A. Is killed by oxygen
 - B. Prefers to grow without oxygen
 - C. Doesn't use oxygen but tolerates it
 - D. Uses oxygen when present or grows anaerobically

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- 32. Mitochondrial DNA is preferred for evolutionary studies because
 - It is enclosed in a lipid bilayer
 - B. It is not exposed to environment
 - C. Of maternal inheritance and lack of recombination
 - D. Of lack of Y-chromosome
- 33. Which force contributes most towards stabilization of native globular protein structure?
 - A. H-bonds

B. Hydrophobic forces

C. π - π interaction

- D. electrostatic attraction
- 34. Affinity protein tags are often appended to recombinant protein for the purpose of
 - A. Solubilization

B. Identification

C. Purification

D. Crystallization

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			[10]		
	C.	3	D.	4	
	A.	1	В.	2	
	stati	stical purpose 1s			
38.	In p	henotypic F2 score	of Mendelian di	hybric	d cross, degree of freedom for
	C.	1/8	D.	3/8	
	A.	1/4	В.	3/4	
	of al	bino allele, what is th	e probability that	their	first child will be an albino girl.
37.	Albi	nism in humans is du	e to autosomal re	ecessiv	e allele. Both parents are carriers
			MILLIA ISLAMIA w Delhi		
	D.	domains in protein	TELL LINES PRODUCT NAME OF THE PARTY OF		
	C.	super-secondary str			
	В.	secondary structure			
	A.	primary structure of			
30.		lix and β -sheet are ex			
36.		L'and a second			
	D.	Unfolded structure	of polypeptide		
	C.	Linear sequence of	amino acids in po	lypept	tide
	В.	rative structure of p	oolypeptide		
		seque	nce of amino acid	is in p	olypeptide
33.	White	3-dimensional	scribes primary str	ructur	e of proteins?

- A man loses 20% of his money and after spending 70% of the remainder he is left 39.
 - .A) Rs 1125

B) Rs 1225

C) Rs 1325

D) Rs 1525

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- The difference of two numbers is 3, and their sum is 99. The smaller number is: 40.
 - A) 45

B)

C) 47

- 41. The average of 30 students in a class is 40 kg. If weight of teacher is included, average weight becomes 41 kg. Weight of teacher is:
 - 69 kg A)

70 kg B)

71 kg

- D) 72 kg
- Equivalent discount of three successive discounts of 10%, 20% and 25% is:
 - A) 41%

B) 42%

C) 46% D) 55% 43. Khalid sold a table to Rashid at 4% profit. Rashid sold the same at Rs 650 and made a profit of 25%. The cost price of Khalid was

A) Rs 500

B) Rs 600

C) Rs 610

D) Rs 575

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- 44. Three partners A, B and C invest Rs 1600, Rs 1800 and Rs 2300 respectively, in a business. If the total profit is Rs 399, share of A is:
 - A) Rs 112

B) Rs 126

C) Rs 161

- D) Rs 263
- 45. Smog in Indian cities mainly consists of
 - A) Oxides of sulphur
 - B) Sulphides of nitrogen
 - C) Oxides of nitrogen and unburnt hydrocarbons
 - D) Suspended particulate matter, ozone and carbon monoxide
- 46. Which state of chromium is most toxic?
 - A) Cr+

B) Cr+2

C) Cr+3

D) Cr+6

47.	Whic	ch fuel source is most pollution	ng?	
	A.	Vegetable waste product	В,	Refuse burning
	C.	Coal	D.	Firewood
		SSF JAMIA MILLIA ISLAMIA New Delhi		
48.	Bene	edict's test is routinely employ	yed to dete	ect presence of
	A.	disaccharides	В.	polysaccharides
	,C.	reducing sugars	D.	non-reducing sugars
49.	Alco	hols heated with concentrate	d Sulphur	ic acid will yield
	A.	alkane	В.	alkene
	C.	ester	D.	aldehyde
50.	Prote	ein separation in Gel chromat	ography i	s dictated by
	A.	relative solubility of gel an	d proteins	
	В.	Stokes radius of solute		
	C.	adherence of solute to matr	ix	
	D.	sequence of loading		
	90			
51.	Whie	ch gas is evolved following r	eaction of	ethylamine with sodium metal?
	A.	oxygen	В.	nitrogen
	C.	ammonia	D.	hydrogen
			[13]	Entrance Evamination - 2021

52.	How	much sodium hydroxide wi	Il be require	ed to neutralize 500ml of 1.0 N HCL?
	ex.	5 gm	B.	10 gm
	C.	20 gm	D.	40 gm
53.	Whic	th of the following will		
	A.	th of the following will mos	st readily gr	ab electrons?
	C.	sodium	В.	oxygen
		- Starting	D.	nitrogen
54.	Alde	hydes react with hydroxyla	MIA MILLIA I New Delhi	CALLED STATE OF STATE
	A.	amino acetals		
	C.	aldoxime	В.	amino hydrazone
		urdonine	D.	amino hydroxide
			15.00	
55.	Hofr	nann bromamide reaction	may be em	ployed to convert
	A.	amide into amine		
	B.	primary amine into secon	ndary amin	e
	C.	Aldehydes into alcohol		
	D.	alcohol into amine.		
56.	Wha	at will be final molarity of	the solution	on, if 400 ml of 1 M solution is mixed
	with	600 ml of 2 M solution?		
	A.	3.00 M	В.	1.60 M
	C.	2.00 M	D.	1.00 M
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57.	In g	eneric formula, R-Mg-X fo	r Grignand	
	A. C.	any electrophilic entity halogen	B. D.	any nucleophilic entity any electropositive metal
58.	Whi	ch of the following has a z	ero dipole?	
	A.	SiF 4	B.	1, 1-dichloroethylene
	C.	CFCl ₃	D.	cis-1, 2-dichloroethylene
		SSF JAMIA MILLIA ISLAMIA New Delhi		
59.	A ca	atalyst increases rate of read	ction by	
	A.	Decreasing enthalpy of the	ne reaction	
	B.	Decreasing internal energ	gy of reactar	nts
	C.	Decreasing activation en	ergy of reac	tion
	D.	All the above		
60.	The	reaction, CH ₃ Cl + H ₂ 0	- NaOH	→CH ₃ 0H + HCl, is an example of
	-A.	Substitution reaction	В.	Addition reaction
	C.	Elimination reaction	D.	Rearrangement reaction
61.	Num	ber of possible geometrica	al isomers	of CH ₃ -CH=CH-CH=CH-CH=CH
	are			
	A.	2	В.	
	C.	6	D.	8
			[15]	Entrance Examination - 2021 - 2

M75 SET - C

- 62. Which of the following is optically active?
 - CH₃CH₂COOH

- CH₁COCOOH B.
- C. HOOC.CH₂.COOH
- сн;снонсоон D.
- 63. Which of the following has chiral carbon atom?
 - CH2Cl2

CHCl₃ B.

CHClBrI

- CH₃Cl D.
- 64. When light travels from air to water, which of the following remains constant
 - Intensity

Wavelength B.

Velocity C.

D. Frequency

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- Energy equivalent to 420 joule is supplied to 10 gm of water. What will be the 65. rise in temperature of water?
 - A. 1°C

B. 10°

C. 4.2°C

- D. 42°C
- How much should the pressure be increased in order to decrease the volume of 66. gas by 5% at constant temperature?
 - A. 5%

B. 10%

C. 4.26%

D. 5.26%

67.	Two	resistances R and 2R are con	nected	in series in an electrical circuit. The
	ratio	of heat in R to that in 2R is:		an electrical circuit. The
	A.	2: 1	B.	1:2
	C.	SSF JAMIA MILLIA ISLAMIA New Delhi	D.	1:4
68.	Hyd	rolysis of triglycerides with alka	ali is cal	lled
	A.	saponification	B.	emulsification
	C.	peroxidation	D,	hydrogenation
69.	Coe	nzyme form of which vitamin is	a nucle	eotide
	A)	Riboflavin	B)	Thiamine
	C)	Pantothenate	D)	Biotin
70.	Cros	ssing over in diploid organism le	ads to	
	A)	Dominance of alleles		
	B)	Segregation of alleles		
	C)	Recombination of linked gene	es	
	D)	Epistasis		
71.	Whi	ch of the following will give po	sitive l	Biuret Test?
	A)	Glycogen	B)	cyclic glucose
	C)	Albumin	D)	chitin

	331	nthesis of glucose from L	actate reast	
	A) C)	Carbon dioxide NADH	B)	ATP
			D)	All of the above
73.	Wh	ich one is aromatic amin	o acid?	
	A)	Gly		Ten
	C)	Ser	В)	Trp
		a and	D)	Val
74.	A	SECOND S	AMIA MILLIA I New Delhi	
/4.	Ang	iosperms differ from gyr	mnosperms in	having .
	A)	Fruits	В)	cotyledon
	C)	Tracheids	D)	broad leaves
75.	Refle	ex actions in humans are	£1	
	, A)	Sensory neuron connec	t to motor neu	ron in spinal cord
	B)	Motor neurons are abse	ent in spinal co	ord
	C)	Muscle responses are a	utonomous	
	D)	Brain collates visual inp	outs to muscle	contraction
76.	One	feature of collenchymas i	s that it is	
	A)	Extremely elastic	В)	extremely plastic
	C)	Devoid of cell wall	D)	devoid of isodiametric cells
M75 S	ET – C		[18]	

77.	The	changes in dependent varia	bl- i	
	a)	Control		led by
	c)	Independent variable	6)	dependent variable
		SSF JAMIA MILLIA ISLAMIA New Delhi	(b)	responding variable
78.	The	water readily available to pl	ants for al	he and the second
	A)	Gravitational water	.B)	
	C)	Rain water	D)	Capillary water
				Hygroscopic water
79.	Whi	ch of the following is commo	only used	for house .
	A)	CTAB	B)	
	C)	Lysozyme	D)	phenol extraction penicillin
80.	Scien	ntific method of bee keeping	is called:	
	A)	Apiculture	B)	Sericulture
	C)	Flyculture	D)	Pisciculture
81.	Whic	h of the following represents	mostly w	ridely used bio-plastic?
	A)	Polystyrene	В)	Polypropylene
	C)	Thermoplastic starch	D)	Polyethylene

82.	Which one is the highest capacity vector?							
	A)	Yeast integrative vector						
	B)	Yeast artificial chromosome						
	C)	Bacteriophage vector						
	,D)	Cosmid						
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83. Which of the following is not the requirement for PCR r				ent for PCR reaction?				
	A)	DNA template	B)	Taq polymerase				
	C)	ADP-ribose polymerase	D)	MgC12				
84. Polio virus possess								
	A)	ss positive-sense RNA genome						
	B)	negative-strand with envelope						
	C) coiled RNA and capsomeres							
	D)	ss DNA with capsid						
85.	In biological systems Proton gradients are used for							
	A)	ATP synthesis	B)	flagellar rotation				
	C)	Transport of metabolites	D)	All of the above				

86.	The inability to distinguish between self-cells and non self-cells may lead to A) Hypersensitivity B)						
	A)	Hypersensitivity	B)	auto-i	nd non self-cells may lead to		
	C)	Immunodeficiency	D)	tolera			
87.	87. DNA fingerprinting technique was developed by:						
	A)	James Watson	B)		Jeffrey		
	C)	Francis Crick SSF JAMIA MILLIA ISLAMIA	D)		d Attenborough		
88.	Fluc	New Delhi prescence in-situ hybridization i	s emple	oyed for	studving		
	A)	Secondary structure of protei		B)	secondary structure of DNA		
	C)	Tertiary structure of RNA	31	Ď)	chromosomal abnormalities		
89.	Neg	ative Staining can be used for e	xamini	ng			
	A)	Membrane structures		B)	Protein aggregates		
	C)	Bacterial flagella		D)	All the above		
90.	Enzy	yme-linked immunosorbent assa	ay, in to	est san	nples, allows for rapid screening		
	of						
	A)	Reducing sugars					
	B)	Non-reducing sugars					
C) Both reducing and non-reducing sugars							
	D)	Antigen					
		[2	1]		Entrance Examination - 2021 - 22		

M75 SET - C

91.	The principle behind Column chromatography is							
	A)	Anion-exchange		Cation-exchange				
	C)	Column-exchange	B)	Differential adsorption				
92.	LDL-receptor is associated with uptake of							
	A)	Cholesterol		Mannose				
	C)	Long chain fatty acids	B)	Low Density leukotrienes				
93.	Which of the following is NOT an example of auto immune disorde							
	A)	Celiac disease	B)	Sickle cell anemia				
	C)	Multiple sclerosis	D)	Rheumatoid arthritis				
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94.	Smooth endoplasmic reticulum is the site of							
	A)	protein synthesis	B)	DNA synthesis				
	C)	amino acid synthesis	D)	Lipid synthesis				
95.	Emb	Embryo culture is used for						
	A)	Establishing suspension culture						
	B)	B) Circumventing post-zygotic barriers C) Rapid fertilization of somatic cells						
	C)							
	D) diploid-haploid switching							