Module Name : MSc Microbiology-E Exam Date : 19-Sep-2020 Batch : 09:00-11:00

Sr. No.	Client Question ID	Question Body and Alternatives	Marks	Negative Marks			
Object	ive Question						
1	1		4.0	1.00			
1	1	Which antibiotic has a beta-lactam ring?	ч.0	1.00			
		Al contribution					
		Cephalosporin					
		Az Penicillin					
		A3 Tetravelia					
		A.4					
		A4 Streptomycin					
Objective Question							
2	2	Which of the following methods would be most appropriate for sterilizing an antibiotic solution?	4.0	1.00			
		A1 Dry Heat Sterilization					
		A2 Mignefiltentian					
		i Micromutatoni					
		A 2					
		AJ Autoclaving					
		A4 Desiccation					
Object	ive Question						
3	3		4.0	1.00			
5	5	Fluoroquinoiones are antibiotics which inhibit	1.0	1.00			
		Al DNA polymerose					
		:					
		A2					
		^{A2} RNA polymerase					
		A3 DNA gyrase					
		A4					
		Cross-linking of peptidoglycan					
Object	ive Question						
4	4	The penicillin stable in gastric acid and suitable for oral administration is	4.0	1.00			
		A1					
		Methicillin					

	A2 Carbenicillin		
	A3 Closacillin		
	A4 Pencillin-G		
Objective Qu	estion		
5 5	Which of the following tests is used to determine the minimal lethal concentration?	4.0	1.00
	Al Broth Dilution Test		
	A2 : Agar Dilution Test		
	A3 Dilution Susceptibility Tests		
	A4 All of these		
Objective Qu	estion		
6 6	Which of the following drugs may show plasmid-mediated resistance?	4.0	1.00
	Al Nalidixic Acid		
	A2 Ampicillin		
	A3 Rifampicin		
	A4 Methicillin :		
Objective Qu	estion		
7 7	Which of the following protein synthesis mechanisms may be affected by particular drugs?	4.0	1.00
	A1 Peptide bond formation		
	A2 mRNA translocation		
	A3 Aminoacyl-tRNA binding		
	A4 All of these		
Objective Qu	estion		
8 8	Both Mycobacterium tuberculosis and Streptococcus pneumoniae	4.0	1.00
	A1 are acquired by inhalation		

		A2 : have cell walls that contain a high content of mycolic acids		
		A3 : have polysaccharide capsules		
		A4 stay in the lung and rarely, if ever, enter the bloodstream		
Objec	tive Question			
9	9	Mucus helps in protecting against pathogens by	4.0	1.00
		A1 Lowering the pH		
		A2 Facilitating the growth of normal flora		
		A3 Blocking access and attachment of pathogens to mucosal surfaces		
		A4 Sequestering iron		
Objec	tive Question			
10	10	The "A" subunit of diphtheria toxin	4.0	1.00
		A1 Binds host cell receptors found on heart cells		
		A2 Cause adpribosylation of a factor involved in protein synthesis		
		A3 Forms camp that leads to fluid accumulation :		
		A4 Lysis macrophages with the release of cytokines		
Objec	tive Question			
11	11	Immunization with which of the following toxoid induces high titer serum antibody, but does not protect from the corresponding disease?	4.0	1.00
		A1 Tetanus :		
		A2 Botulism		
		A3 Diphtheria		
		A4 Shigellosis		
Obiec	tive Question			

12	12	Lactoferrin helps to protect against pathogens by	4.0	1.00
		A1 Sequestering iron		
		A2 Blocking sebum production		
		A3 Lowering the ph		
		A4 Facilitating the growth of normal flora		
Object	tive Question			1
13	13	The influenza vaccine is administered each year because	4.0	1.00
		$\stackrel{A1}{:}$ Mutations in the viral hemagglutinin may allow the virus to evade the immune response elicited by previous vaccines :		
		$\frac{A2}{2}$ It is a polysaccharide vaccine that does not confer long-term protection		
		A3 The vaccine is sufficiently toxic to make it necessary to administer only a small amount at any one time :		
		A4 None of these		
Object	tive Question			
14	14	Which of the following is analogous to mesosomes of bacteria?	4.0	1.00
		A1 Mitochondria of eukaryotes		
		A2 Golgi apparatus of eukaryotes		
		A3 Lysosomes of eukaryotes		
		A4 : None of these		
Object	tive Question			
15	15	Chemotaxis is a phenomenon of	4.0	1.00
		A1 Swimming away of bacteria		
		A2 Swimming towards a bacteria		
		A3 Swimming away or towards of bacteria in presence of chemical compound		
		A4 None of these		

Objec	tive Question			
.6	16	Which of the following specimens contain/s hepatitis B virus in an infected person?	4.0	1.00
		A1 Blood		
		A2 Semen		
		A3 Saliva		
		A4 : All of these		
Objec	tive Question			
17	17	Organisms with complex life cycles which include a mammalian host and an insect host and involves schizogony as part of the cycle belong to which phylum of Protozoa?	4.0	1.00
		A1 Sarcomastigophora :		
		A2 : :		
		A3 Apicomplexa		
		A4 : Myxozoa		
Objec	tive Question			
8	18	Negative strand ssRNA viruses need to have a preformed replicase when they invade a mammalian cell because they	4.0	1.00
		A1 Use it to terminate transcripts when they copy host cell mRNA :		
		A2 Have to make a positive strand copy that can be translated		
		A3 Use it to modify host enzymes that are recruited for viral replication :		
		A4 None of these		
Obiec	tive Ouestion			
.9	19	Mumps vaccine is prepared from the cultures of	4.0	1.00
		A1 Chick fibroblasts		
		A2 African green monkey cells		
		A3 Healthy calves		

		A4 Sheep		
bject	ive Question			
)	20	The RNA sarcoma viruses, the most strongly transforming viruses may transform which of the following cells in a culture?	4.0	1.00
		A1 Fibroblasts		
		A2 : Myoblasts		
		A3 : Iris epithelial		
		A4 : All of these		
oject	ive Question			
	21	Mycoplasmas are different from the other prokaryotes by	4.0	1.00
		A1 Presence of chitin in cell walls		
		A2 Presence of murrain in cell walls		
		A3 Presence of proteins in cell walls		
		A4 Absence of cell wall itself		
bject	ive Question			
2	22	One of the first enzymes synthesized by many bacteriophage is, an RNA-dependent RNA polymerase.	4.0	1.00
		A1 RNA transcriptase		
		A2 RNA polymerase		
		A3 RNA ligase		
		A4 RNA replicase		
oject	ive Question			
	23	Which of the following disinfectants act by disrupting microbial membranes?	4.0	1.00
		A1 Cationic detergents		

		A3 Heavy metals : A4 Aldehydes :		
Obje	ctive Question			
24	24	Which of the following does not kill endospores?	4.0	1.00
		Al Autoclave		
		A2 Incineration		
		A3 Hot air sterilization		
		A4 Pasteurization		

25	25	Ethylana oxida is used to destroy or kill which of the following microhes?	4.0	1.00
25	25	Ethylene oxide is used to destroy or kill which of the following microbes? A1 Bacteria A2 Spores A3 Fungi A4 All of these	4.0	1.00
Object	ive Question			
26	26	Which of the following proteins prevents the reannealing of single strands?	4.0	1.00
		A1 SSB		

		A2 : Helicase		
		A3 Primase		
		A4 DNA polymeraase		
Objec	tive Question			
27	27	Mutations caused by the replacement of a purine by pyrimidine is known as	4.0	1.00
		A1 Transversion		
		A2 Transition		

		A3 : :		
		A4 Frameshift mutation		
Object	ive Question			
28	28	mRNA that codes for two or more different polypeptide are known as	4.0	1.00
		A1 Polycistronic mRNA :		
		A2 : Monocistronic mRNA		
		A3 Ribosome		
		A4 ribozyme :		
Object	ive Question			
29	29	Which of the following is intercalating agents that causes induced mutation.	4.0	1.00
		A1 Ethidium :		
		A2 Proflavin,		
		A3 : Acridine orange		
		A4 All of these		
Object	ive Question			
30	30	RNA polymerase recognition sequences located at the -10 region of prokaryotic promoters are known as	4.0	1.00
		A1 Pribnow box		
		A2 Consensus sequence		
		A3 Palindrome sequence		
		A4 Inverted repeats		
Object	ive Question			
31	31	In eukaryotes, replication occurs during the phase of the cell cycle.	4.0	1.00
		A1 Go phase		

	A2 G2 phase		
	A3 S phase		
	A4 : M phase		
biective Ouestic	n		
32	RNAs that catalyse biological reactions are known as	4.0	1.00
	A1 Ribosome		
	A2 : Ribozymes		
	A3 RNase		
	A4 : DNase		
bjective Questic	n		
3 33	The regions of DNA that encode for a polypeptide in eukaryotes are termed as	4.0	1.00
	Al Exons		
	A2 : Introns		
	A3 Insertion region		
	A4 Coding region		
bjective Questic	n		
4 34	Hoogsteen pairing in DNA allows the formation of	4.0	1.00
	AI G quadrets		
	A2 Cruciform DNA		
	A3 Hairpin DNA :		
	A4 : Triplex DNA		
bjective Questic	yn stat werde sta		
5 35	Small nuclear ribonuclear proteins (What are snRNPs) helps in	4.0	1.00

	A1 Splicing of exon		
	A2 Splicing of mRNA		
	A3 splicing of introps		
	· spheng of hidons		
	A4 splicing of rRNA		
Objective Question		4.0	1.00
36 36	Which of the following is not a post transcriptional mechanism?	4.0	1.00
	A1 RNA editing		
	A2 Amino acid activation		
	A3 Polyadenylation :		
	A4 Trans apliaing		
	: Trais spicing		
Objective Question			
37 37	Xerodermapigmentosum is caused due to the defect in which of the following DNA repair pathways	4.0	1.00
	^{A1} Mismatch Repair		
	A2 Nucleatide Engine Parair		
	: Nucleonae Excision Repair		
	A3 Non-Homologous End Joining		
	A4 Post Replication Repair		
Objective Question			
38 38	Frederick Sanger was awarded the Nobel Prize in 1980 for	4.0	1.00
	Al second of DNA		
	: Sequencing of DNA		
	A2 Polymerase chain reaction		
	A3 Site directed mutagenesis		
	A4 Structure of DNA		

39	39	The nucleotides of DNA or RNA are covalently linked through	4.0	1.00
		A1 Phosphodiester bonding		
		A2 Sulphide bond		
		A3 Hydrogen bond		
		A4 : Carbon-oxygen bond		
Object	ive Question			
40	40	Which of the following is correct?	4.0	1.00
		A1 : A DNA (Right-handed helix)		
		A2 B DNA (left-handed helix)		
		A3 Z DNA (Right-handed helix)		
		A4 : A DNA (left-handed helix)		
Object	ive Question			
41	41	Most cervical cancer is caused by a virus called	4.0	1.00
		A1 i human papillomavirus		
		A2 HIN1		
		A3 HIN2		
		A4 Herpes simplex virus		
Object	ive Question			
42	42	The process by which cancer cells spread to other parts of the body is called	4.0	1.00
		A1 Homeostasis		
		A2 : Hematopoiesis		
		A3 : Metastasis		
		A4 Pathogenesis		

Objec	tive Question			
43	43	Uridyltransferase in Azospirillumsp is encoded by	4.0	1.00
		Al glnA		
		A2 glnB		
		A3 glnD		
		A4 ntrC		
Object	tive Question			
44	44	Which of the following perform oxidation of sulfur under anaerobic environment?	4.0	1.00
		when of the following perform of and of our and and of a monore of the monore at		
		Al Thiobacillus		
		A2 : Chlorobium		
		A3 : Thiothrix		
		A4 : Beggiatoa		
Objec 45	tive Question		4.0	1.00
45	45	The paralogue of GlnB in E coli is encoded by	4.0	1.00
		Al glnB		
		A2 glnK		
		A3 glnD		
		A4 : glnN		
Ohian	tive Question			
46	46	Which of the following rRNA does not undergo processing?	4.0	1.00
		Al 5S rRNA		
		A2 18S rRNA		
		A3 5.8S rRNA		

		A4 28S rRNA		
Objec	tive Question			
47	47	Which of the following is not a structural gene of lac operon?	4.0	1.00
		Al lac A		
		A2 lac I		
		A3 lac Y :		
		A4 lac Z		
Objec	tive Question			
48	48	Which of the following is not a characteristic of cancer cells?	4.0	1.00
		A1 loss of cell cycle control		
		A2 transplantability		
		A3 loss of contact inhibition		
		A4 All of these		
Objec	tive Question			
49	49	The mechanism that cause a gene to move from one linkage group to another is	4.0	1.00
		A1 Translocation		
		A2 Duplication		
		A3 Inversion		
		A4 Crossing over		
Objec	tive Question			
50	50	Transcriptional attenuation of trp operon is mediated by	4.0	1.00
		A1 trp RNA binding attenuation protein (TRAP)		
		A2 : Histones		
		A3 RNA polymerase		

in

		: A4 Single strand binding protein		
Objec	tive Question		1	
51	51	Enzymes responsible for alcoholic fermentation	4.0	1.00
		Al Ketolase		
		A2 : Zymase		
		A3 Peroxidase		
		A4 : Oxidase		
Objec	tive Question			
52	52	Bacterial transformation was discovered by	4.0	1.00
		A1 Ederberg and Tatum		
		A2 : Beadle and Tatum		
		A3 Griffith		
		A4 None of these		
Objec	tive Question			
53	53	Small pox vaccine was first discovered by	4.0	1.00
		A1 Robert Koch		
		A2 : Louis Pasteur		
		A3 Lister		
		A4 Edward Jenner		
Objec	tive Question			
54	54		4.0	1.00

O	Objective Question								
54	1	54	Kuru disease in Humans is caused by	4.0	1.00				
			A1						
			Bacteria						
			Α2						
			Viroides						

		A3 Prions		
		A4 Mycoplasma :		
Objec	ctive Question			1.00
55	55	Erythrocytes will get its ATP energy only by	4.0	1.00
		Al Glycolysis		
		A2 Kreb's cycle		
		A3 Electron transport		
		A4 : Hmp shunt		
Objec	ctive Question			
56	56	Meosomes are the part of	4.0	1.00
		Al Plasma membrane		
		^{A2} Er		
		A3 Lysosomes		
		A4 Golgi :		
Objec	ctive Question			
57	57	Koplic spots observed in the mucous membrane is characteristic feature of this disease	4.0	1.00
		A1 Rubella		
		A2 Measles		
		A3 Mumps		
		A4 : Influenza		
Objec	ctive Question	μ		
58	58	The motile bacteria is	4.0	1.00
		A1 Salmonella typhi :		

		A2 Klebsiellapneumoniae :		
		A3 Bacillus anthracis		
		A4 Shigellaflexneri :		
Objec	tive Question			
59	59	One gram of soil sample has been diluted to 10^{-5} and 0.5 ml of it has been inoculated in a petri plate containing agar media. The number of colonies recorded in the plate after 24 hrs incubation is 60. The CFU count will be:	4.0	1.00
		$ \stackrel{A1}{:} 60 \ge 10^{-5}/g $		
		$^{A2}_{:}$ 60 x 10 ⁵ /g		
		$^{A3}_{:}$ 120 x 10 ⁻⁵ /g		
		$^{A4}_{:}$ 120 x 10 ⁵ /g		
Objec	tive Question			
60	60	Mycobacteria are stained with	4.0	1.00
		A1 Gram's Staining		
		A2 Simple Staining		
		A3 Both Gram's Staining and Simple Staining		
		A4 Ziehl – Neelsen's Staining		
Objec	tive Question			
61	61	The term mutation was coined by	4.0	1.00
		Al Pasteur :		
		A2 : Darwin		
		A3 Hugo devries		
		A4 : Lamark		
Object	tive Question			
62	62	Rancidity in spoiled foods is due to	4.0	1.00

A1 Lipolytic organisms	
A2 : Proteolytic organisms	
A3 Toxigenic microbes	
A4 Saccharolytic microbes	

63	63	Hybridoma technique was first discovered by	4.0	1.00
		A1 : Kohler and Milstein		
		A2 Robert Koch		
		A3 : D' Herelle		
		A4 : Land Steiner		
Object	ive Question			
64	64	Modern concepts of chemotherapy was proposed by	4.0	1.00
		Al Paul Ehrlich		
		A2 : Joseph Lister		

	A3 Elie Metchnikoff	
	A4 None of these :	

5	``			
65	65	Helper virus for Hepatitis delta virus is	4.0	1.00
		A1 Hepatitis B Virus		
		A2 Hepatitis D Virus		
		A3 Hepatitis E Virus		
		A4 Hepatitis C Virus		
Object	ive Question			

66	66	Plant viral proteins Involved in the spread of infection via plasmodesmata	4.0	1.00
		A1 Movement proteins		
		A2 : Membrane proteins		
		A3 Transmembrane proteins		
		A4 Channel proteins		
Objec	tive Question			
67	67	T2 bacteriophage, receptor is	4.0	1.00
		A1 OmpC		
		A2 OmpN		
		A3 OmpF		
		A4 : OmpT		
01.				
Objec	tive Question		4.0	1.00
00	08	Small arginine rich cationic proteins found in epithelial cells against pathogens are	4.0	1.00
		A1 : Defensins		
		A2 : Interferons		
		A3 Antibodies		
		A4 Proteomes		
Objec	tive Question			
69	69	Antiviral drug 'Ribavirin' inhibits	4.0	1.00
		A1 : Viral DNA replicase		
		A2 : Viral RNA replicase		
		A3 Viral protein synthesis		
		A4 : Viral budding		

Object	ive Question			
70	70	Acyclovir inhibits	4.0	1.00
		A1 Thymidine kinase		
		A2 Histidine kinase		
		A3 Rna transferase		
		A4 Cystine kinase		
Object	ive Question			
71	71	Spliceosomes contains	4.0	1.00
		A1 mRNA and protein		
		A2 snRNA and protein		
		A3 tRNA and protein		
		A4 siRNA and protein		
Object	ive Ouestion			
72	72	Translation initiator tRNA in prokarvotes is	4.0	1.00
		Al F-his-tRNA :		
		A2 F-cys-tRNA		
		A3 F-met-tRNA		
		A4 F-trp-tRNA		
Object	ive Question			
73	73	Which of the banana bunchy top virus DNA's are monocistronic	4.0	1.00
		A1 2 and 6		
		A2 1 and 5		
		A3 4 and 5		

		A4 3 and 4		
Object	ive Question			
74	74	Vector for Bunyavirus is	4.0	1.00
		A1 : Mosquito		
		A2 : Tick		
		A3 Sandfly		
		A4 : Thrip		
Object	ive Question			
75	75	Ebola virus contains	4.0	1.00
		A1 : (-)single-stranded RNA		
		A2 (+)single stranded RNA		
		A3 : double standred DNA		
		A4 : Single stranded DNA		
Object	ive Question			
76	76	To digest cellulose in its environment, a microorganism produces a/an	4.0	1.00
		A1 endoenzyme		
		A2 : catalase		
		A3 : exoenzyme		
		A4 Polymerase		
Object	ive Question			
77	77	Which of the following statements is true about enzymes?	4.0	1.00
		A1 Enzyme (E) converts substrate/s (S) to products (P) and accelerates the reaction.		
		A2 Substrate/s (S) converts enzyme (E) to products (P).		
		A3 Both Enzyme (E) converts substrate/s (S) to products (P) and accelerates the reaction and Substrate/s (S) converts		

		: enzyme (E) to products (P)		
		A4 None of these :		
Object	tive Question			
78	78	Histidine, Leucine, Methionine are examples of	4.0	1.00
		Al Non-essential amino acids		
		A2 Essential amino acids		
		A3 : Moderately essential amino acids		
		A4 Very essential amino acids		
Objec	tive Question			
79	79	Which of the following is an example of a monosaccharide?	4.0	1.00
		A1 Glucose		
		A2 Cellulose		

Object	Objective Question						
80	80	The major chemical messenger involved in hypersensitivity is	4.0	1.00			
		A1 Interleukins A2 Histamines A3 Interferons					
		A4 Lymphokines					
Object	ive Question						
81	81	A disease that can be transmitted by an infectious agent from one individual to another is called	4.0	1.00			

A1 Epidemic : A2 Pandemic

:

A3 Chitin

A4 : Starch

A3 Communicable disease

A4 : Coma

Objec 82

ct	ive Question	ve Question				
	82	The main constituent of the bacterial cell wall is	4.0	1.00		
		A1 Peptic acid				
		A2 Peptones				
		A3 Peptidoglycan				
		A4 None of these :				

Objective Question

83	83	Stains useful for identifying fungus include:	4.0	1.00
		A1 Gram stain		
		A2 : Methylene blue		
		A3 : Lactophenol cotton blue		
		A4 : Giemsa		

84	84	Hepatitis B	4.0	1.00
		A1 : is a DNA virus		
		A2 : is a RNA virus		
		A3 is a bacterium		
		A4 : is a viroid		
Objec	tive Question			
85	85	Haploids are more suitable for genetic studies because	4.0	1.00
		A1 All mutations, whether dominant or recessive are expressed in haploids		

		A2 Haploids are reproductively more stable than diploids :		
		A3 Mutagens penetrate in haploids more effectively than in diploids		
		A4 Haploids are more abundant in nature than diploids		
Objec	tive Question			
86	86	Aneuploidy is a resultant of	4.0	1.00
		A1 Loss of chromosomes		
		A2 Gain of chromosomes		
		A3 Non-disjunction of chromosomes		
		A4 All of these		
Objec	tive Question			
87	87	Histones are found in	4.0	1.00
		A1 Prokaryotes :		
		A2 Eukaryotes		
		A3 Viruses		
		A4 None of these		
Objec	tive Question			
88	88	Humans normally have 46 chromosomes in skin cells. How many autosomes would be expected in a kidney cell?	4.0	1.00
		A1 46		
		A2 23		
		A3 47		
		A4 44 :		
Objec 89	tive Question		4.0	1.00
		metaphase stage of cell division?		

	A1 20 chromosomes and 40 chromatids :	
	A2 40 chromosomes and 20 chromatids	
	A3 40 chromosomes and 40 chromatids	
	A4 20 chromosomes and 20 chromatids	
Objective Question		

90	90	Immediately after ovulation, the mammalian egg is covered by a membrane called	4.0	1.00
		A1 chorion		
		A2 : zona pellucida		
		A3 : corona radiata		
		A4 vitelline membrane		

Objective Question

91	91	The term "metagenome" stands for	4.0	1.00
		A1 Plasmid DNA :		
		A2 Environmental genome		
		A3 DNA of clones		
		A4 Whole genome of an organism		

Objective Question						
92	92	Fusion of two dissimilar gametes is called	4.0	1.00		
		Al allogamy :				
		A2 autogamy :				
		A3 fertilization				
		A4 dichogamy				
Objective Question						

93	93	Colostrum is rich in the antibody particularly	4.0	1.00
		A1 IgA		
		A2 IgM		
		A3 IgD		
		A4 None of these		
Objec	tive Question			
94	94	Trophoblastic cells of the human blastocyst secrete a hormone called	4.0	1.00
		A1 human chorionic gonadotrophin (HCG)		
		A2 : amniotic fluid		
		A3 gastric acid		
		A4 None of these		
Objec	tive Question			
95	95	Movement of DNA from one bacterium to another through a tubular bridge or pilus is called	4.0	1.00
		A1 Transfection		
		A2 Transposition		
		A3 Conjugation		
		A4 Transduction		
Objec	tive Question			
96	96	A region along one strand of a double stranded DNA molecule consists of tandem repeats of the trinucleotide 5'- TCG-3', so the sequence in this strand is 5'- TCGTCGTCGTCGTCGTCG-3', What is the sequence on the other strand?	4.0	1.00
		A1 3'- AGCAGCAGCAGC-5'		
		A2 3'- UGCUGCUGCUGC-5'		
		A3 5'- AGCAGCAGCAGC-3'		

		A4 5'- UGCUGCUGCUGC-3'		
Objecti 97	97	If the restriction enzyme Alu I is used to cleave the dsDNA sequence given below, how many dsDNA fragments would result? The recognition sequence is 5' - AGCT-3' 5' - ATGCTCAATTTCAGCTCGAATTTTGCC-3' 3 - TACGAAGTAAAGTCGAGCTTAAAACGG-5'	4.0	1.00
		A1 2		
		$ \overset{A2}{:} 3 \\ A3 $		
		A4 None of these		
Object	ive Question			1.00
98	98	Al Bibozymes	4.0	1.00
		A2 p.		
		A 3		
		Nucleus :		
		A4 Hitochondrion		
Object	ive Question			1.00
99	99	If the source of energy for bacteria is from chemical compounds they are said to be	4.0	1.00
		Phototrophs		
		A2 Autotrophs		
		A3 : Chemotrophs		
		A4 None of these		
Object	ive Question			
100	100	Microbiome analysis is based on	4.0	1.00
		A1 Cultured bacteria		
		A2 Entire microbiota of a sample		

A3 Genome of a bacterial species

A4 Entire Probiotic bacteria of a sample :