

BRAINWARE UNIVERSITY

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Brainware University
398, Ramkrishnapur Road, Barasat
Kolkata, West Rengal-70012

Term End Examination 2019 - 20

Programme - Bachelor of Science Honours in Biotechnology

Course Name - Biotechnology & Human Welfare

Course Code - BBT304A

(Semester - 3)

			(Semester –	3)	Separate of the State of the	
Time	allotted	: 3 Hours			Full Marks: 70	
[The	figure in		full marks. Car vn words as far		ates are required to give their answers practicable.]	
			Group -A	A 723		
		(Mu	ltiple Choice T	уре	Question) $20 \times 1 = 20$	
1.	Choos	se the correct alternati	ve from the fol	lowi	ing (Answer any Twenty)	
(i)	The E	C number 3.4.11.6 is o	conferred to:		my and the second	
	a.	Trypsin		b.	Lysozyme	
1	c.	Urease		d.	Chymotrypsin	
(ii)	The m	olecular weight of alc	ohol is:			
	a.	44.23 g/mol		b.	45.08 g/mol	
	c.	46.07 g/mol		d.	47.06 g/mol	
(iii)	Strepto	omycin is produced fro	om:		Paragraphy and the second	
	a.	D-lactose		b.	D-galactose	
	c.	D-rhamnose		d.	D-glucose	
(iv)	The su	btilisin gene in E. coli	is usually mut	atec	i , og a , provincia sitt tarbait () - (hite	The second second
	a.	SDM		b.	SHM	
	c.	SSM		d.	None of these	
(v)	Penicil	llin production usually	stops at:		and the form of the second	
. 723		15 days		b.	13 days	The state of
		12 days		d.	8 days	
	15.55				Figure 1 and the second of the	

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,	(vi)	The co	nversion of nitrogen to ammonia or	nitro	ogenous compounds is called as:		
	2002 16 1		Nitrogen assimilation		Nitrogen fixation		
13.69		4	Denitrification	d.	Nitrification		
45*	(vii)		otic N ₂ fixing cyanobacteria are pres				
	(VII)	-	Anthoceros		Azolla		
			Cycas		Gnetum		
	(viii)	Indust	rial fixation is accomplished by:				
		a.	Helmonts process		Haber process		
		c.	Friedal-Crafts reaction	d.	Reimer Tiemann reaction		
	(ix)	Which	of the following is not a characterist	tic o	of a transgenic crop?		
		a.	Herbicide resistance	b.	Bt insect resistance toxin		
		c.	Increased methionine content	d.	None of these		
	(x)	Two g	Two genes from a bacterium (Alcaligenes eutrophus) and a cotton gene produce:				
		a.	a plastic	b.	a vaccine against the bacterium		
		c.	a pharmaceutical product	d.	herbicide resistance		
	(xi)	Which	Which of the following self-pollinating plant/(s) tend to be homozygous?				
		a.	Peas	b.	Tomato		
		c.	Peach	d.	All of these		
	(xii)	Transj	plastomics				
		a.	targets genes in the	b.	provides exceptionally low yields of		
			chloroplast		protein products		
		c.	produces genes that are	d.	offers little opportunity for practical		
			released in pollen		use		
	(xiii)	Which of the following gene is responsible for resistance against chilling?					
		a.	Glycerol 1 phosphate acyl	b.	Polygalactouranase		
			transferase				
		c.	ACC deaminase	d.	Sucrose phosphate synthase gene		

(xiv)	What is greenhouse effect?						
	a. It is a phenomenon that traps	b.	It is a phenomenon of releasing heat				
	long wavelength radiation that		wave to the environment.				
	leads to more heating and a						
	higher resultant temperature.						
	c. Both a and b	d.	None of the above				
(xv)	When the problem of ozone depletion was first identified?						
	a. 1970	b.	1971				
	c. 1972	d.	1973				
(xvi)	Which of the following options is involved in production of carboxy haemoglobin?						
	a. SO ₂	b.	NO ₂				
	c. NO ₃	d.	CO				
(xvii)	The maximum size of fly ash is						
	a. 1 μm	b.	100 μm				
	c. 1000 µm	d.	10 μm				
(xviii)	The permissible concentration of PM 10 in the air is						
	a. 60 μg/m³	b.	$40 \mu g/m^3$				
	c. 50 μg/m ³	d.	$20 \mu g/m^3$				
(xix)	BOD/COD ratio will always be:						
	a. Equal to 1	b.	Less than 1				
	c. More than 1	d.	None of them				
(xx)	Sound becomes hazardous noise pollution at decibels:						
	a. Above 80	b .	Above 30				
	c. Above 100	d.	Above 120				
(xxi)	Liquid hydrocarbon is converted into gaseous hydrocarbon by:						
	a. Oxidation	b.	Hydrolysis				
	c. Cracking	d.	Distillation				
(xxii)	Which one of the following causes is harmful to human health?						
	a. Organic farming	b.	Use of pesticides				
	c. Use of solar vehicles	d.	Forests protection				
(xxiii)	How many percentage of water approximately present in human body?						
	a. 50%	b.	60%				
	c. 70%	d.	80%				

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 $4 \times 5 = 20$

 $3 \times 10 = 30$

(xxiv) Which one of the following options can cause breast cancer in women?
a. Breastfeeding
b. Being physically fit
c. Using antiperspirant
d. Eating healthy food
(xxv) Which of the following options is not an example of natural biodegradable polymer?
a. Collagen
b. Polyvinyl alcohol
c. Lignin
d. Natural rubber

Group – B

(Short Answer Type Questions)

Answer any four from the following 2. Differentiate between Lyases and Ligases. 5 3. What are Antibiotics? 5 4. Briefly describe Tetracycline. 5 5. Explain Herbicide resistance in plants. 5 6. Mention the processes involved in breakdown of agricultural wastes. 5 7. What is "DNA fingerprinting"? 5

Group - C

(Long Answer Type Questions)

Answer any three from the following (a) Calculate the ethanol yield in biological route of ethanol production. 8. 2 (b) Describe the process of sugar fermentation. 2 (c) Explain the yeast "Saccharomyces cerevisiae". 2 (d) Explain the process flow diagram for molasses based ethanol production. 4 9. What is "de-novo" protein engineering approach? (a) 3 Explain the industrial applications of engineered enzymes. (b) 3 Represent the "de-novo" design diagrammatically. 4

10.	(a)	Explain "Transgenic plants".	5
	(b)	Describe the transfer process of pest resistance genes to plants.	5
11.	(a)	Differentiate between "Synthetic" and "Biodegradable" polymers.	2
	(b)	Explain the biosynthesis of PHB.	2
	(c)	What are the properties of PHB?	2
	(d)	Elaborate poly (hydroxyalkanote) (PHA).	4
12.	(a)	Describe "Gene therapy."	2
	(b)	Briefly describe the diagnostics involved in gene therapy.	2
	(c)	Diagrammatically explain 'Monoclonal antibody production'.	2
	(d)	Elucidate the "Human Genome Project".	4

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