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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech.

SEM: III - THEORY EXAMINATION (2021 - 2022) (ONLINE)

Subject: Cell Biology and Microbiology

Time: 02:00 Hours

Max. Marks: 100

General Instructions:

1. All questions are compulsory. It comprises of two Sections A and B.

- Section A - Question No- 1 has 35 objective type questions carrying 2 marks each.
- Section B - Question No- 2 has 12 subjective type questions carrying 3 marks each. You have to attempt any 10 out of 12 question.
- No sheet should be left blank. Any written material after a Blank sheet will not be evaluated/checked.

SECTION A

35 x 2 = 70

1. Attempt ALL parts:-

- 1.1.a Genetic material is contained within the ____ of the cell. 1
- (a) ribosome
(b) cytoplasm
(c) nucleus
(d) nucleolus
- 1.1.b Bacterial flagella is made up of 1
- (a) tubulin
(b) flagellin
(c) chitin
(d) None of these
- 1.1.c _ _ _ _ _ told first that new cells arise from pre-existing cells 1
- (a) Schleiden and Schwann.
(b) Rudolf Virchow.
(c) Watson and crick.
(d) Leeuwenhoek Answer
- 1.1.d A plant cell wall is mainly composed of 1
- (a) Protein
(b) Cellulose
(c) Lipid
(d) Starch
- 1.1.e Which of the following cell organelles is absent in prokaryotic cells 1
- (a) Nucleus
(b) Lysosome
(c) Endoplasmic Reticulum
(d) All of the above
- 1.1.f Which of the following is a single membrane-bound organelle 1
- (a) vacuole
(b) Golgi Apparatus
(c) Endoplasmic Reticulum

	(d) All of the above	
1.1.g	Nucleus is the powerhouse of the cell	1
	(a) TRUE	
	(b) FALSE	
1.2.a	Nuclear DNA replicates in the S phase	1
	(a) TRUE	
	(b) Flase	
1.2.b	The G0 state implies the exit of cells from the cell cycle	1
	(a) TRUE	
	(b) Flase	
1.2.c	If an individual wants to view diakinesis, which of these would be	1
	(a) Hair	
	(b) Leaf	
	(c) Onion root	
	(d) Flower bud	
1.2.d	The _____ checkpoint is also known as restriction point	1
	(a) G1	
	(b) G2	
	(c) M	
	(d) S	
1.2.e	Who coined the term cell	1
	(a) Van Burin and Hertwigfitybh	
	(b) Boveri and Stuka	
	(c) Walleye and Hofmeister	
	(d) Robert Hooke	
1.2.f	The condensation of chromosomes is observed in	1
	(a) Prophase 1	
	(b) Anaphase 1	
	(c) Metaphase 1	
	(d) None of the above	
1.2.g	What is the number of DNA in the chromosome at the G2 stage of the cell cycle	1
	(a) 1	
	(b) 2	
	(c) 3	
	(d) 0	
1.3.a	The outer membrane contains porins?	1
	(a) TRUE	
	(b) FALSE	
1.3.b	Bacteria are best measured in nanometers?	1
	(a) TRUE	
	(b) FALSE	
1.3.c	Which of the following are the main functions of the capsid?	1
	(a) Determines the antigenic specificity of the virus	
	(b) Protects genetic material from nuclease attack	
	(c) Both A and B	
	(d) None of these	

1.3.d	Which of the following is a Complex media for fungal growth? (a) Nutrient broth (b) Luria-Bertani media (c) Potato Dextrose Agar(PDA) media (d) Mac Conkey Agar media	1
1.3.e	A structural component that is found in all viruses (a) The envelope (b) DNA (c) Capsid (d) Tail fibers	1
1.3.f	An icosahedral capsid consists of (a) Hexagonal capsomeres (b) Pentagonal capsomeres (c) Triangular capsomeres (d) Both a and b	1
1.3.g	Which of the following virus has the smallest genome? (a) Rabies virus (b) Circovirus (c) Herpes virus (d) Mimi virus	1
1.4.a	Yeast is used for the production of (a) Tetracycline (b) Butanol (c) Ethanol (d) Citric Acid	1
1.4.b	Which of the following microorganisms is not used as a biofertilizer? (a) Rhizobium (b) Nostoc (c) Mycorrhiza (d) Agrobacterium	1
1.4.c	The remaining sewage after it has passed through the sludge tank is known as ---- (a) treated sewage (b) effluent (c) clinker (d) distillate	1
1.4.d	The most spoilage bacteria grows at _____ (a) cidic pH (b) Neutral pH (c) Alkaline pH (d) All of the above	1
1.4.e	Yeast cells contains 7% protein (a) TRUE (b) FALSE	1
1.4.f	The remaining sewage after it has passed through the sludge tank is known as (a) treated sewage (b) effluent	1

	(c) clinker	
	(d) distillate	
1.4.g	Water temperature is	1
	(a) An extrinsic factor	
	(b) A processing factor	
	(c) An intrinsic factor determining the likelihood of microbial proliferation	
	(d) All of the above	
1.5.a	Vibrio Cholerae causes Leprosy in humans	1
	(a) TRUE	
	(b) FALSE	
1.5.b	Causative of Chickenpox is E. Coli	1
	(a) TRUE	
	(b) FALSE	
1.5.c	Cheese is made by grapes	1
	(a) TRUE	
	(b) FALSE	
1.5.d	Shredded cabbage is the starting product for which of the following fermented food	1
	(a) Sauerkraut	
	(b) Pickles	
	(c) Green olives	
	(d) Sausage	
1.5.e	Water activity is	1
	(a) An extrinsic factor	
	(b) A processing factor	
	(c) An intrinsic factor determining the likelihood of microbial proliferation	
	(d) All of the above	
1.5.f	Environmental Biotechnology involves	1
	(a) Study benefits of Modified microorganisms	
	(b) Bioremediation	
	(c) Use of Microorganisms to clean environment	
	(d) All of the above	
1.5.g	Bioremediation helps us to treat throat infection	1
	(a) TRUE	
	(b) FALSE	

SECTION B

10 X 3 = 30

2. Answer any TEN of the following:-

2.1.a	Draw a structure of cells?	2
2.1.b	Why it is important to study a cell?	2
2.2.a	Name the phases and their significance in Mitosis?	2
2.2.b	Distinguish between mitosis and cytokinesis.	2
2.2.c	Define log phase	2
2.3.a	Define virus? Give 2 examples	2
2.3.b	What is a single cell colony? Mention its importance.	2
2.3.c	Define Disinfectant	2
2.4.a	Why it is important to study industrial microbiology?	2

2.4.b	Define fermentation	2
2.5.a	Name the symptoms and causative agent of Typhoid	2
2.5.b	Name the causative agent of Cholera and its symptoms.	2