



திருவள்ளுவர் பல்கலைக்கழகம், வேலூர்

# **THIRUVALLUVAR UNIVERSITY, VELLORE**

**Ph.D., - COMMON ENTRANCE TEST (CET9) – JUNE SESSION 2022**

**Subject : MICROBIOLOGY**      **Exam Date : 26.06.2022**  
**Time : 11.00 A.M. TO 12.30. P.M**      **Maximum Marks : 50**

<b>NAME</b>		<b>REGISTER NO</b>	
		<b>HALL TICKET NO.</b>	
<b>MOBILE NO</b>		<b>EMAIL ID</b>	
<b>CANDIDATE SIGNATURE</b>		<b>HALL INVEGILATOR SIGNATURE WITH DATE</b>	

**SECTION – A (50 x 1 = 50 Marks)**

**All Questions carry equal marks**



20. After the new classification of living organisms into three domains of life, which one of the following is true about archaea?
- (A) **absent in other eukaryotes and prokaryotes**      (B) Completely differ from both eukaryotes and prokaryotes  
(C) Resembles eukarya in all respects      (D) Completely differ from prokaryotes
21. The mode of action of Ultraviolet radiation on DNA to induce mutation is the
- (A) Methylation of base pairs      (B) Addition of base pairs  
(C) **Formation of thymine dimers**      (D) Deletion of base pairs
22. The DNA polymerase involved in base excision repair is
- (A) DNA polymerase  $\sigma$       (B) **DNA polymerase  $\beta$**   
(C) DNA polymerase  $\alpha$       (D) DNA polymerase  $\gamma$
23. Basic tools of genetic regulation are the ability of some proteins to bind to specific
- (A) **Regulatory DNA sequences**      (B) Promoter portions of genes  
(C) Regulatory RNA sequences      (D) Enzymes of cells
24. Conjugative plasmids
- (A) carry transfer genes called the *tra* genes      (B) **exhibit antibiotic resistance**  
(C) do not carry transfer genes      (D) do not exhibit antibiotic resistance
25. The process of Transduction was discovered by
- (A) **Lederberg and Zinder**      (B) Hayes, Lederberg and Woolman  
(C) Iwanowsky      (D) Griffith
26. Klenow fragment is the modified enzyme of which of the parent DNA polymerase?
- (A) DNA polymerase II      (B) DNA polymerase IV  
(C) **DNA polymerase I**      (D) DNA polymerase III
27. Which of the following is not present in YAC3 vector?
- (A) TRP1      (B) **Amp**  
(C) URA3      (D) CEN4
28. To avoid ligation of separate DNA fragments, which of the enzyme is used?
- (A) Ligase      (B) Endonuclease  
(C) **Phosphatase**      (D) Kinase
29. The type of vaccines authorized by the FDA and WHO are proven to be effective and safe against the COVID-19?
- (A) Toxoid vaccine      (B) Conjugated vaccine  
(C) **mRNA vaccine**      (D) Live attenuated
30. In PCR, Denaturation is the process of
- (A) Heating between 40 to 60°C      (B) Heating between 72°C  
(C) **Heating between 90 to 98°C**      (D) None of the above
31. The cells involved in cell-mediated immunity is
- (A) T cells      (B) Mast cells  
(C) Thrombocytes      (D) Leukaemia

- 32 Specific antibodies are readily detectable in serum following primary contact with antigen after  
(A) 15 min. (B) 5 - 7 days  
(C) 1 h. (D) 8 - 9 weeks
33. Which of the following does not act as a protecting barrier for the body surface?  
(A) Salivary amylase (B) Mucus  
(C) Gastric acid (D) Skin
34. The test done prior to transplantation surgery to determine the compatibility of MHC proteins between donor and recipients is called  
(A) MHC matching (B) Blood HLA test  
(C) MHC typing (D) Tissue typing
35. The radioimmunoassay technique was discovered by  
(A) Fahey and McKelvey (B) Eva Engvall and Peter Perlman  
(C) Robert Koch (D) Yalow and Berson
36. Which of the following method is useful for isolation and detection of organisms having the ability to produce growth factors?  
(A) Crowded plate technique (B) Enrichment Culture technique  
(C) Indicator dye technique (D) Auxanographic technique
37. The initial use of computers in fermentation technology was used in production of  
(A) Glutamine and Lysine (B) Glutamic acid and Penicillin  
(C) Penicillin and Cystine (D) Cystine and Butyric acid
38. 4. Which of the following fermenters are characterized by height to diameter ratio?  
(A) Tower fermenter (B) Airlift fermenter  
(C) Perfusion bioreactor (D) Hollow fiber
39. High Auxin/kinetin ratio in nutritional media for protoplast culture is preferred  
(A) To induce cell division (B) To induce cell growth  
(C) To induce cell regeneration (D) All the above
40. During the preservation of microbial cell culture  
(A) Metabolism stops (B) Metabolism changes  
(C) Metabolism continues (D) Physiology shanges
41. How can some extremophiles live under extreme conditions?  
(A) Because they have learned to adapt to the easy conditions (B) Because they are smart animals  
(C) Because they have learned to adapt to the difficult conditions (D) None of the above
42. Which of the following is an extremophile from Eukarya?  
(A) Cyanidiales (B) Pyrococcus furiosus  
(C) Shewanella psycrophilia (D) Dienococcus radiodurans
43. The characteristics of barophilic prokaryotes is  
(A) Grow and multiply in very deep marine sediments (B) Grow slowly in high alkaline frozen lakes in high altitudes  
(C) Occur in water containing high amount of Barium hydroxide (D) Rapidly grown and divides in sea water enriched in any soluble salt of barium

44. Primer used for the process of polymerase chain reaction are
- (A) Single stranded RNA (B) Double stranded DNA  
(C) Double stranded RNA (D) Single stranded DNA  
oligonucleotide  
oligonucleotide
45. Which of the following features differs archaeabacteria from eubacteria?
- (A) Mode of reproduction (B) Cell membrane structure  
(C) Cell shape (D) Mode of nutrition
46. The process of formation of RNA is known as
- (A) Replication (B) DNA repair  
(C) Translation (D) Transcription
47. Scientist disproved Spontaneous generation theory by using simple goose-necked flasks is
- (A) Louis Pasteur (B) Franz Schulze  
(C) H. Schroder and T. Von Dusch (D) Theodor Schwann
48. If the DNA strand has nitrogenous base sequence ATTGCC, the mRNA will have?
- (A) UAACGG (B) ATTGCA  
(C) ATCGCC (D) UGGACC
49. Which of the following enzymes separates the two strands of DNA during replication?
- (A) DNA polymerase (B) Gyrase  
(C) Topoisomerase (D) Helicase
50. The first post transcriptional RNA processing event is
- (A) Editing (B) Tailing  
(C) Capping (D) Splicing