

128 PU Ph D Microbiology

1 of 100

165 PU-2016_128_E

Which of the following interaction can be studied using Electrophoretic mobility shift assay?

- ☐ Protein - RNA
- ☐ Protein - DNA
- ☐ Protein - Protein
- ☐ Protein - Nucleic acid

2 of 100

108 PU-2016_128_E

A good qualitative problem statement:-

- ☐ Conveys a sense of emerging design
- ☐ Specifies a research hypothesis to be tested
- ☐ Specifies the relationship between variables that the researcher expects to find
- ☐ Defines the independent and dependent variables

3 of 100

216 PU-2016_128_E

The meninge lying closest to the spinal cord is the _____.

- ☐ Arachinoid mater
- ☐ Cauda equina
- ☐ Pia mater
- ☐ Dura mater

4 of 100

192 PU-2016_128_E

Bordeaux mixture is a:-

- ☐ Herbicide
- ☐ Insecticide
- ☐ Helminthicide
- ☐ Fungicide

5 of 100

132 PU-2016_128_E

The outcomes of an experiment are classified as:-

- ☐ exponential results
- ☐ results
- ☐ events

- ☐ logged events

6 of 100

117 PU-2016_128_E

A positive correlation is present when _____.

- ☐ two variables move in opposite directions
- ☐ two variables move in the same direction
- ☐ one variable goes up and one goes down
- ☐ several variables never change

7 of 100

113 PU-2016_128_E

Hypotheses in qualitative research studies usually _____.

- ☐ Are never used
- ☐ Are often generated as the data are collected, interpreted, and analyzed
- ☐ Are very specific and stated prior to beginning the study
- ☐ Are always stated after the research study has been completed

8 of 100

160 PU-2016_128_E

The factor which promotes virulence of the M tuberculosis is:-

- ☐ Muramyl dipeptide
- ☐ Mycolic acid
- ☐ Wax D
- ☐ cord factor

9 of 100

101 PU-2016_128_E

The research antagonistic to ex-post facto research is:-

- ☐ Normative researches
- ☐ practical research
- ☐ Experimental researches
- ☐ Library researches

10 of 100

152 PU-2016_128_E

Which of the following is false about Wiskott - Aldrich syndrome?

- ☐ Vulnerability to infections
- ☐ Thrombocytopenia
- ☐ Associated eczema

- ☐ Elevated IgM

11 of 100

149 PU-2016_128_E

The codon for anticodon 3'-CAU-5' is:-

- ☐ 3'-CAU-5'
- ☐ 3'-UAC-5'
- ☐ 3'-UAG-5'
- ☐ 3'-AUG-5'

12 of 100

200 PU-2016_128_E

The most common type of reproduction in bacteria is:-

- ☐ binary fission
- ☐ sexual reproduction
- ☐ budding
- ☐ binary fusion

13 of 100

104 PU-2016_128_E

A measure based upon a sample is known as:-

- ☐ Inference
- ☐ Statistics
- ☐ methods
- ☐ Sample parameter

14 of 100

201 PU-2016_128_E

An autoimmune disease is:-

- ☐ Myasthenia gravis
- ☐ Asthma
- ☐ Haemophilia
- ☐ AIDS

15 of 100

112 PU-2016_128_E

The research participants are described in detail in which section of the research plan?

- ☐ Method
- ☐ Discussion
- ☐ Introduction

- ☐ Data analysis

16 of 100

164 PU-2016_128_E

RT-PCR is used in diagnosis of All except:-

- ☐ Polio virus
- ☐ Adeonvirus
- ☐ Astrovirus
- ☐ Rotavirus

17 of 100

181 PU-2016_128_E

The methyl-accepting chemotaxis proteins of bacteria:-

- ☐ tell the bacterium which way to go
- ☐ integrate multiple signals through a two-component phospho-relay system
- ☐ can only sense conditions that are favorable for bacterial growth
- ☐ are directly connected to the flagellar motor to guide the bacterium

18 of 100

180 PU-2016_128_E

Some bacteria are considered 'pleomorphic'. This means:-

- ☐ they are not either bacilli or cocci
- ☐ they do not have just one shape
- ☐ they are shaped like bent rods
- ☐ they have a corkscrew shape

19 of 100

161 PU-2016_128_E

In which stage of the cell cycle, the diploid cell will have twice the amount of DNA as the gamete?

- ☐ G2 phase
- ☐ M phase
- ☐ G1 phase
- ☐ S phase

20 of 100

208 PU-2016_128_E

The strain of fungi used for the large scale production of penicillin is:-

- ☐ *Penicillium notatum*
- ☐ *Streptomyces Aurecus*
- ☐ *Saccharomyces sps*

- ☐ *Penicillium chrysogenum*

21 of 100

209 PU-2016_128_E

The by-product during streptomycin production is:-

- ☐ Vitamin B12
- ☐ Vitamin A
- ☐ Citric acid
- ☐ Proline

22 of 100

168 PU-2016_128_E

After binding to the plasma membrane of its host cell, an influenza virus particle is taken into the cell by:-

- ☐ Receptor mediated endocytosis
- ☐ Exocytosis
- ☐ Clathrin coated vesicles
- ☐ Endocytosis

23 of 100

204 PU-2016_128_E

The following is an asexual fungal spore:-

- ☐ Ascospore
- ☐ Chlamydospore
- ☐ Zygosporangium
- ☐ Basidiospore

24 of 100

120 PU-2016_128_E

Which correlation is the strongest?

- ☐ +.10
- ☐ -1.00
- ☐ -.95
- ☐ +.90

25 of 100

121 PU-2016_128_E

Analysis of covariance is:-

- ☐ A statistical technique that can be used to help equate groups on specific variables
- ☐ Adjusts scores on the independent variable to control for extraneous variables
- ☐ A statistical technique that substitutes for random assignment to groups

- ☐ A statistical technique that can be used to control sequencing effects

26 of 100

212 PU-2016_128_E

If you take 1µl from a stock of 2 g % solution of compound A and make the final volume to 2 litres. What is the dilution factor and final concentration of compound A?

- ☐ 200 and 100 µg/ml
- ☐ 200000 and 100 µg/ml
- ☐ 200000 and 10µg/ml
- ☐ 200 and 10µg/ml

27 of 100

169 PU-2016_128_E

The graft taken from a cadaver is:-

- ☐ Autograft
- ☐ Isograft
- ☐ Allograft
- ☐ Xenograft

28 of 100

124 PU-2016_128_E

Which of the following is not one of the seven major parts to the research report?

- ☐ Results
- ☐ Footnotes
- ☐ Method
- ☐ Abstract

29 of 100

153 PU-2016_128_E

Which organ has more hematopoiesis at the 4th month of gestation period?

- ☐ Liver & Spleen
- ☐ Yolk Sac
- ☐ Bone marrow
- ☐ Yolk Sac, Liver

30 of 100

145 PU-2016_128_E

Darting motility is shown by:-

- ☐ Vibrio
- ☐ Proteus

- ☐ Serratia
- ☐ *E. coli*

31 of 100

141 PU-2016_128_E

Which of the following marker is used to define B cells in humans?

- ☐ CD 4
- ☐ CD8
- ☐ CD19
- ☐ CD 20

32 of 100

197 PU-2016_128_E

Alkylating agents:-

- ☐ Solubilize proteins
- ☐ Disrupts structure of protein and nucleic acid
- ☐ Dissolves lipid
- ☐ Lowers surface tension

33 of 100

176 PU-2016_128_E

The function of ruminant organisms is to:-

- ☐ digest cellulosic materials into organic acids which can be used as energy sources
- ☐ produce vitamin supplements and immunogens
- ☐ construct cellulose from organic acids and use the cellulose as an energy source
- ☐ produce methane gas and increase global warming

34 of 100

140 PU-2016_128_E

Somatic mutations of immunoglobulin genes account for:-

- ☐ allelic exclusion
- ☐ class switching from IgG to IgA
- ☐ affinity maturation
- ☐ class switching from IgM to IgG

35 of 100

184 PU-2016_128_E

The most dangerous and heat resistant spoilage organism in canning industry is:-

- ☐ *Bacillus subtilis*
- ☐ *Clostridium cellulolyticum*

- ☐ *E.coli*
- ☐ *Clostridium botulinum*

36 of 100

156 PU-2016_128_E

Cellulase is a polymer of D-glucose:-

- ☐ α -1,6 linkage
- ☐ α -1,4 linkage
- ☐ β -1,6 linkage
- ☐ β -1,4 linkage

37 of 100

188 PU-2016_128_E

Fungal compound, cyclosporine is an extremely effective:-

- ☐ antibiotic
- ☐ immunosuppressant
- ☐ wound healing ointment
- ☐ stimulant

38 of 100

185 PU-2016_128_E

The first antibody to contact invading microorganisms was:-

- ☐ IgM
- ☐ IgA
- ☐ IgG
- ☐ IgD

39 of 100

109 PU-2016_128_E

According to the text, which of the following orders is the recommended in the flowchart of the development of a research idea?

- ☐ Research topic, research problem, research purpose, research question, and hypothesis
- ☐ Research topic, research problem, research purpose, research question, hypothesis
- ☐ Research topic, research purpose, research problem, research question, hypothesis
- ☐ Research topic, hypothesis, research problem, research question, research purpose

40 of 100

129 PU-2016_128_E

What does it mean if two variables have a positive correlation?

- ☐ As one variable increases, so does the other

- ☐ As one variable increases, the other decreases
- ☐ The correlation between the two variables is greater than 1.0
- ☐ The correlation between the two variables is 0

41 of 100

177 PU-2016_128_E

_____ is the process in which organic matter is decomposed to release simpler, inorganic compounds.

- ☐ Ammonification
- ☐ Mineralization
- ☐ Immobilization
- ☐ Nitrogen Fixation

42 of 100

173 PU-2016_128_E

In Gram Staining, alcohol acts on:-

- ☐ Membrane lipids
- ☐ Teichoic acids
- ☐ Periplasm
- ☐ Peptidoglycan

43 of 100

116 PU-2016_128_E

In _____, random assignment to groups is never possible and the researcher cannot manipulate the independent variable.

- ☐ basic research
- ☐ causal-comparative and correlational research
- ☐ quantitative research
- ☐ experimental research

44 of 100

196 PU-2016_128_E

The main constituent of algal cell wall is:-

- ☐ Chitin
- ☐ Suberin
- ☐ Lignin
- ☐ Cellulose

45 of 100

148 PU-2016_128_E

The gene for green fluorescent protein (GFP), a commonly used reporter gene, was cloned from:-

- ☐ *Danio rerio*
- ☐ *Sus domesticus*
- ☐ *Vibrio cholera*
- ☐ *Equorea victoria*

46 of 100

136 PU-2016_128_E

The key objective of data analysis is to:-

- ☐ Provide those reading the report with as much detail as possible about the survey results
- ☐ Calculate statistics
- ☐ Obtain the distribution of responses for each question and create tables which display the survey results
- ☐ Understand relationships between variables

47 of 100

205 PU-2016_128_E

Dipicolonic acid is present in:-

- ☐ Cyst
- ☐ Exospores
- ☐ Conidia
- ☐ Endospore

48 of 100

128 PU-2016_128_E

What is the final step of a scientific investigation?

- ☐ collect data
- ☐ determine whether the hypothesis was supported
- ☐ report the findings
- ☐ analyze data

49 of 100

215 PU-2016_128_E

Subacute sclerosing panencephalitis (SSPE) is complication caused by infection with _____.

- ☐ Chickenpox virus
- ☐ HSV-1
- ☐ Influenza virus
- ☐ Measles virus

50 of 100

193 PU-2016_128_E

The causal organism of damping off of seedlings is:-

- ☐ *Pythium debaryanum*
- ☐ *Phytophthora infestans*
- ☐ *Alternaria solani*
- ☐ *Albugo candida*

51 of 100

189 PU-2016_128_E

Ergot disease is caused by:-

- ☐ Rhizopus
- ☐ Puccinia
- ☐ Claveiceps
- ☐ Penicillium

52 of 100

137 PU-2016_128_E

A dNTP master mix is prepared by combining 50 μ l each of 10mM dNTP stock. Two micro liters from this dNTP mix are added to the PCR master mix of 25 μ l reaction volume. What is the total dNTP concentration in the PCR reaction?

- ☐ 200 μ M
- ☐ 250 μ M
- ☐ 800 μ M
- ☐ 400 μ M

53 of 100

157 PU-2016_128_E

The consensus sequence required for the initiation of translation is termed:-

- ☐ Pribnow Box
- ☐ Shine Dalgarno Sequence
- ☐ TATA Box
- ☐ Kozak Sequence

54 of 100

100 PU-2016_128_E

Calculate the value of coefficient variation if mean of distribution is 14 and the standard deviation is 5.

- ☐ 60.4%
- ☐ 35.7%
- ☐ 48.3%
- ☐ 27.8%

55 of 100

211 PU-2016_128_E

Which microorganism is employed for the production of dextran?

- ☐ Rhizopus
- ☐ Torulopsis
- ☐ Leuconostoc
- ☐ Lactobacillus

56 of 100

144 PU-2016_128_E

Which of the following is not oncogenic ?

- ☐ Herpes simplex virus
- ☐ Varicella zoster virus
- ☐ EB virus
- ☐ Papilloma virus

57 of 100

172 PU-2016_128_E

Which of these is not a cell organelle?

- ☐ Ribosomes
- ☐ Nucleus
- ☐ Ribozymes
- ☐ Mitochondrion

58 of 100

133 PU-2016_128_E

If a bag contains three fruits, 16 percent are apples, 30 percent are oranges and 20 percent some other fruit that is neither oranges nor apples then the probability of selecting an orange randomly is:-

- ☐ 0.45
- ☐ 0.3
- ☐ 0.034
- ☐ 0.65

59 of 100

125 PU-2016_128_E

Open-ended questions provide primarily _____ data.

- ☐ Confirmatory data
- ☐ Quantity data
- ☐ Predictive data
- ☐ Qualitative data

60 of 100

105 PU-2016_128_E

Researches that relies on experience or observation is called:-

- ☐ Exploratory research
- ☐ Simulation research
- ☐ Conceptual research
- ☐ Empirical research

61 of 100

249 PU-2016_128_M

Mangroves are highly productive eco system but they are poor in bird diversity because:-

- ☐ Lack of structural diversity
- ☐ More number of predators that feed on birds
- ☐ Lack of breeding place
- ☐ Lack of food diversity

62 of 100

237 PU-2016_128_M

Polio virus has:-

- ☐ dsDNA
- ☐ ds RNA
- ☐ ssDNA
- ☐ ssRNA

63 of 100

229 PU-2016_128_M

The most sensitive method of detecting infection by cytomegalovirus (CMV) in the new born is:-

- ☐ isolation of the virus
- ☐ direct detection of antigen by ELISA
- ☐ detection of IgM antibody by immunofluorescence
- ☐ identification of characteristic cells in gastric secretions

64 of 100

252 PU-2016_128_M

Which of the following lymphoid organ is important to clear blood born pathogen?

- ☐ lymph node
- ☐ pancreas
- ☐ Thymus
- ☐ Spleen

65 of 100

256 PU-2016_128_M

The reference compound of choice for proton and carbon NMR is:-

- ☐ Tetramethylsilane
- ☐ DMSO-d₆
- ☐ chloroform-d (DCCl₃)
- ☐ deuterium oxide (D₂O)

66 of 100

257 PU-2016_128_M

When pathogenic bacterial cells lose the ability to make adhesion, they:-

- ☐ Absorb endotoxin
- ☐ Increase in virulence
- ☐ Produce endotoxin
- ☐ Become avirulent

67 of 100

233 PU-2016_128_M

The complete denaturation of a protein leads to a loss of the following structure(s):-

- ☐ primary and tertiary
- ☐ primary and secondary
- ☐ secondary and tertiary
- ☐ primary

68 of 100

244 PU-2016_128_M

Biological false reaction in VDRL is related to:-

- ☐ *Lactobacilli*
- ☐ *Bordetella pertussis*
- ☐ *Corynebacterium diphtheria*
- ☐ *Lepra bacilli*

69 of 100

225 PU-2016_128_M

Which of the following does not apply to triplex DNA?

- ☐ It requires only Hoogsteen hydrogen bonding
- ☐ It is triple stranded in nature
- ☐ It requires Watson-Crick hydrogen bonding
- ☐ It forms at neutral or acidic pH

70 of 100

224 PU-2016_128_M

The oxygen solubility in a bioreactor depends upon:-

- ☐ Aeration
- ☐ Agitation
- ☐ Both Agitation and Aeration
- ☐ Viscosity and surface tension

71 of 100

245 PU-2016_128_M

Which of the following cytokine is ligand for IL-4 receptor?

- ☐ IL-13
- ☐ IL-4
- ☐ IL-7
- ☐ both IL-4 & IL-13

72 of 100

240 PU-2016_128_M

Enzymes responsible for alcoholic fermentation:-

- ☐ Peroxidase
- ☐ Zymase
- ☐ Ketolase
- ☐ Oxidase

73 of 100

221 PU-2016_128_M

Is not an onco virus or tumor virus:-

- ☐ *Hepatitis B*
- ☐ *Varicella virus*
- ☐ *Simian virus 40*
- ☐ *Epstein-Bar virus*

74 of 100

220 PU-2016_128_M

Marine bacteria change their morphology in response to the nutrients in their surrounding environment and the phenomenon is referred as:-

- ☐ Oligotrophism
- ☐ Syntrophism
- ☐ Heterotrophism

- ☐ Pleomorphism

75 of 100

236 PU-2016_128_M

Is not a factor responsible for the pathogenecity of virulent *Staphylococcus aureus*:-

- ☐ coagulase
- ☐ β -lactamase
- ☐ hyaluronidase
- ☐ m- protein

76 of 100

248 PU-2016_128_M

Which of the following antibodies can be used in flowcytometry to study STAT5 phophorylation in mast cells?

- ☐ Anti STAT5 conjugated with FITC
- ☐ Anti-phospho STAT5 conjugated with biotin
- ☐ Anti-phospho STAT5 conjugated with FITC
- ☐ Anti-phospho STAT6

77 of 100

253 PU-2016_128_M

Which technology can be used to validate microarray data?

- ☐ qRT-PCR
- ☐ PCR
- ☐ RT-PCT
- ☐ nested PCR

78 of 100

228 PU-2016_128_M

The 5th human malarial parasite is:-

- ☐ *Plasmodium yoellii*
- ☐ *Plasmodium fragile*
- ☐ *Plasmodium knowlesi*
- ☐ *Plasmodium cynomolgi*

79 of 100

232 PU-2016_128_M

Disulphide bonds in proteins could be formed by cysteines using:-

- ☐ reduced glutathione
- ☐ oxidized glutathione

- ☐ Iodoacetamide
- ☐ β -mercaptoethanol

80 of 100

241 PU-2016_128_M

Which vector would be most appropriate for cloning a 150 kb fragment of DNA?

- ☐ λ vector
- ☐ BAC
- ☐ pBR322
- ☐ YAC

81 of 100

298 PU-2016_128_D

A taxon is:-

- ☐ New taxonomist
- ☐ Herbal taxonomist
- ☐ A group of related families
- ☐ Modern taxonomist

82 of 100

269 PU-2016_128_D

The serological marker of acute hepatitis B infection is:-

- ☐ HBsAg
- ☐ HBcAg
- ☐ HBsAg + HBeAg
- ☐ HBsAg + Core antibody

83 of 100

274 PU-2016_128_D

How many structural genes are there in trp operon?

- ☐ three
- ☐ Five
- ☐ four
- ☐ six

84 of 100

266 PU-2016_128_D

In a non-obligatory interaction if both partners are mutually benefitted it is called as:-

- ☐ Commensalism
- ☐ Mutualism

- ☐ Cooperation
- ☐ Competition

85 of 100

289 PU-2016_128_D

Which of the following stem cells are currently used to treat diseases?

- ☐ embryonic stem cells
- ☐ Hematopoietic Stem cells
- ☐ Neural stem cell
- ☐ induced pluripotent stem cells

86 of 100

297 PU-2016_128_D

The national herbarium in our country is located in:-

- ☐ Chennai
- ☐ Mumbai
- ☐ Delhi
- ☐ Kolkata

87 of 100

261 PU-2016_128_D

Which of the following viruses are widely used in living vaccines?

- ☐ Coronavirus
- ☐ Retrovirus
- ☐ Vaccinia virus
- ☐ Influenza virus

88 of 100

293 PU-2016_128_D

Which of the following is dominated by plants that drop their leaves yearly to conserve water?

- ☐ Desert
- ☐ Coniferous forest
- ☐ Tropical rain forest
- ☐ Temperate deciduous forest

89 of 100

281 PU-2016_128_D

Induced pluripotent stem cells have the same developmental potential as:-

- ☐ Hematopoietic stem cells
- ☐ Cancer stem cells

- ☐ Neural Stem cells
- ☐ Embryonic stem cells

90 of 100

285 PU-2016_128_D

All of the following are known to be part of a signal transduction cascade EXCEPT:-

- ☐ Phosphorylation of fibronectin
- ☐ Elevation of intracellular $[Ca^{2+}]$
- ☐ Dissociation of the components of a heterotrimeric G-protein
- ☐ Enzymatic breakdown of phosphatidyl inositol bisphosphate (PIP2)

91 of 100

270 PU-2016_128_D

Release of nutrients, oxidants or electron donors into the environment to stimulate naturally occurring microorganisms to degrade a contaminant, is referred to as:-

- ☐ Biostimulation
- ☐ Bioremediation
- ☐ Bioaugmentation
- ☐ Phytoremediation

92 of 100

273 PU-2016_128_D

The free energy released from the *oxidation of pyruvate by the pyruvate dehydrogenase complex* is stored in what energy-rich molecule?

- ☐ Thiamine Pyrophosphate
- ☐ NADH and Acetyl-CoA
- ☐ $FADH_2$
- ☐ Acetyl-CoA

93 of 100

290 PU-2016_128_D

Particular RNAs that are important for development are located in distinct regions of the *Drosophila* embryo. This is most directly demonstrated by using:-

- ☐ Western blotting
- ☐ *in vitro* translation
- ☐ Northern blotting
- ☐ *in situ* hybridization

94 of 100

262 PU-2016_128_D

A minimal medium contains 0.0002% $MnCl_2$. To prepare 200 ml of the medium _____ ml should be taken from a solution of $MnCl_2$ 0.2 g%?

- ☐ 0.2 ml
- ☐ 20 ml
- ☐ 0.02 ml
- ☐ 2.0 ml

95 of 100

286 PU-2016_128_D

Which of the following method is used to study gene expression from single cell?

- ☐ Flowcytometry
- ☐ insitu hybridization
- ☐ qRT-PCR
- ☐ Northern Blot

96 of 100

294 PU-2016_128_D

If less light falls on the pond's surface:-

- ☐ The Size of fish population is no way connected with amount of light falling on a pond
- ☐ Size of fishes become larger
- ☐ The size of fish population become smaller
- ☐ Mutation will take place in fishes

97 of 100

277 PU-2016_128_D

Neisseria spp. causes two dangerous diseases in humans. They are:-

- ☐ Gonorrhea and Meningitis
- ☐ Typhoid and Plague
- ☐ Diphtheria and Syphilis
- ☐ Pneumonia and Diphtheria

98 of 100

265 PU-2016_128_D

mRNA nucleotide modification is performed by:-

- ☐ snRNA
- ☐ guide RNA
- ☐ tRNA
- ☐ Y RNA

99 of 100

282 PU-2016_128_D

Which of the following types of molecules is always found in virions?

- ☐ Lipid
- ☐ RNA
- ☐ Protein
- ☐ DNA

100 of 100

278 PU-2016_128_D

Diphtheria toxin inhibits protein synthesis through:-

- ☐ Inhibiting peptide bond formation
- ☐ Release of peptidyl tRNA from P site
- ☐ Causing formation of ADP-EF2 complex
- ☐ Binding of factor EF-1