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Assistant Professor(Microbiology)

Passage:

Everything except the truth wears, and needs to wear, a mask. Little souls are ashamed of nature.Prudery pretends to have only those passions that it cannot feel. Moral poetry is like a respectable canal that never overflows its banks. It has weirs, through which, slowly any excess of feeling is allowed to flow. It makes excuses for nature, and regards love as an interesting convict. Moral art paints or chisels feet, faces or rags. It regards the body as obscene. It hides behind with drapery, that which it has not the genius purely to portray. Mediocrity becomes moral from a necessity which it has the impudence to call virtue. It pretends to regard ignorance as the foundation of purity, and insists that virtue seeks the companionship of the blind.

<u>Itemcode</u> : CR1071	
Q1: It is suggested in the above passage that the morality of mediocrity is based upon	
 (a) impudence (b) virtue (c) necessity (d) purity Key: C 	
Itemcode : CR1072	
Q2 : "Everything except the truth wears, and needs to wear, a mask". The above statement implies that	
 (a) Everything wears or needs a mask (b) Truth needs to wear a mask (c) Truth never wears or needs a mask (d) Everything does not need a mask. Key: C 	
<u>Itemcode</u> : CR1073 Q3 : From the options given below, select the one that best explains the following statement form the passage: "that which it has not the genius purely to portray".	
 (a) feet, faces, rags (b) obscene body (c) mediocrity (d) nudity of the body Key: D 	
Itemcode : CR1074 Q4 : The phrase "little souls" in the passage means	
 (a) petty individuals (b) prudes (c) adolescent artists (d) moralists Key: A 	
<u>Itemcode</u> : CR1075 Q5 : Identify the odd part of speech from the following terms in the passage: "prudery; obscene; virtue; impudence	e
 (a) virtue (b) prudery (c) virtue 	

Q6: A study of six patients who all suffer from a rare form of cancer revealed that though they all live in different locations in the county and have quite different medical histories, diet, and personal habits-two smoke cigarettes and three drink alcoholic beverages-they are all employed at a company that manufactures herbicides and pesticides. From this study it can be concluded that exposure to the chemicals produced by the company is the probable cause of the disease. The method of reasoning used by this argument is:

(a) Isolating a common feature through a process of elimination and concluding that this feature is causally related to the event under investigation.

(b) Reaching a general conclusion on the basis of the experiences of the six patients.

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(c) Providing information that allows the application of a general claim to a specific case.

(d) Indirectly showing that exposure to the chemicals produced by the company is the likely cause by demonstrating that none of the other alternatives is the cause.

Key: **B**

<u>Itemcode</u> : CR1052

- Q7: The average annual salary for executives at World-Wide Travel last year was 55,000 dollars, while the average salary for travel consultants was 47,000 dollars. The average annual salary for all employees was 38,000 dollars. If the above information is correct, which one of the following conclusions can be properly inferred from it?
- (a) There were fewer executives than travel consultants at World-Wide Travel last year.
- (b) No travel consultants earned more than an executive last year.
- (c) There was at least one employee who earned less than the average for a travel consultant.
- (d) Some travel consultants earn more than the lowest paid executives.
- Key: C

Itemcode : CR1053

- **Q8**: A recipe for cooking potatoes states that potatoes should be cooked in boiling water for 20 minutes to be properly prepared. This holds only for potatoes that have been diced into one-inch cubes-smaller cubes would require proportionately less cooking time and larger ones proportionately more. It is important that potatoes not be overcooked, since this greatly diminishes their food value. Undercooking also should be avoided because undercooked potatoes cannot be properly digested.
 - If the above statements are true, which of the following conclusions is most strongly supported?

(a) Whole potatoes, when properly cooked, cannot be properly digested.

(b) Potatoes that are diced into one-half-inch cubes and cooked in boiling water for 20 minutes will likely have little food value.

(c) Potatoes that are properly digestible must be cooked in boiling water for at least 20 minutes.

(d) Boiling in water is the only method of cooking potatoes that will ensure high food value and proper digestibility.

Key: B

Itemcode : CR1054

Q9: Analytic propositions provide no information about any matter of fact. This applies to all analytic propositions. In other words, they are entirely devoid of information about the world. It is for this reason that no empirical evidence can refute them.

Which of the following must be assumed for the above argument's conclusion to be properly drawn?

- (a) The truth or falsity of analytic propositions cannot be determined by empirical evidence.
- (b) Analytic propositions are neither true nor false.
- (c) Analytic propositions are completely uninformative.
- (d) Empirical evidence can only refute propositions that provide information about matters of fact.

Key: D

Itemcode : CR1055

 Q10 The Philadelphia Eagles are given 7 to 2 odds of winning the NFC championship. The New England Patriots are gi to 3 odds of winning the AFC championship. Therefore, the Eagles and the Patriots will meet in the Super Bowl. T conclusion follows from the argument with a probability of : 	
(a) . (b) .	57
(b) .	47

(c) .67

(d) 77

Key: A

Itemcode : CR1056

Q11 If 'relftaga' means carefree, 'otaga' means careful and 'fertaga' means careless, which of the following could mean 'aftercare'?

(a) zentaga

- (b) tagafer
- (c) tagazen(d) relffer
- Key: C

:

Itemcode : CR1057

Q12 What will be the next letter in the following series?

DCXW, FGVU, HGTS (a) AKPO (b) JBYZ (c) JIRQ (d) LMRS Key: **C**

Itemcode : CR1058

Q13 A paragraph is given from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

In an unsupported expedition, North Pole travellers must ski, snowshoe, swim, and climb, all while towing a 300-pound sled of supplies approximately 480 miles, which takes about 50 to 70 days. There are mounds of ice as big as houses to get over and stretches of 30-degree water to traverse, which travellers swim across wearing a full-body rubber suit. Air temperatures often hover around 40 degrees below zero.

(a) "The future of skiing to the North Pole is dim."

(b) "It's the most difficult expedition on the planet that nobody really knows about," says Larsen.

(c) During a 2007 expedition, Weber walked for 10 to 12 hours a day, but because the ice he was on was drifting south, he stayed in virtually the same spot.

(d) Further complicating the matter, the weather window for reaching the North Pole is short-and getting shorter every yearlasting from early March to early May, when the harshest temperatures of winter abate and the summer melt cycle is just beginning,

Key: **B**

Itemcode : CR1059

Q14 A paragraph is given from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most appropriate way.

One thing I remember is that I never saw my father running. This odd fact came to me one day recently when I was sprinting for a train, and I brooded on it for a long time afterwards. He must have run, of course, sometimes and on some necessary occasions, but if he did, and if I saw him, I have no memory of it. His life, moving at an even and unruffled pace, was limited on all sides by the circumstances of his time, his class and his age.

(a) Perhaps I am being patronising by thinking my father's life monotonous.

(b) For him, as for so many of his class and time, life had its fixed phases: childhood, the brief flowering of adolescence, then adulthood, marriage and the long plateau stretching to retirement.

(c) To me they seemed, until their final years, to be of an indeterminate age, creatures essentially of a different species, permanent and unchanging, simply there.

(d) Thinking back on the lives of one's parents and making comparisons with one's own life can be a dizzying exercise. Key: **D**

Itemcode : CR1060

Q15 The given text is followed by four alternative summaries. Choose the option that best captures the essence of the text. :

10 New mobile networks come along once every decade or so. Starting around 1980, the first generation of cellular phones relied on analogue technology. When the second-generation arrived in 1991, the networks began to go digital. By 2001, the third-generation swapped clunky old circuit-switching with efficient packet-switching. Around 2010, fourth-generation networks adopted IP technology in a big way, providing mobile devices with broadband access to the internet. What to expect from 5G? At this stage, one of the few things that can be said about 5G with certainty is that-if it is to meet society's growing demands for ubiquitous and instantaneous connectivity-such networks will need to have a response time of about one millisecond.

(a) The generational changes in mobile networks have been brought about as an answer to the growing demands of society. 5G is the future of mobile networks as it will change how people use mobiles.

(b) Mobile networks see a change after each decade and this change is in line with the expectation of society. 5G is what people will be using in the future.

(c) Each generational change in mobile networks has seen additions to the various basic features for which mobiles are used. The future now is 5 G which will bring instant connectivity to the fore.

(d) Mobile networks are constantly upgraded with introduction of new technology. 5G is the future of mobile networks right now.

Key: D

Itemcode : CR1061

Q16 Alice in Wonderland' the famous TV serial is based on a book written by

- :
- (a) Father Discoste
- (b) Thomas Hardy
- (c) Charles Dickens
- (d) Lewis Caroll
- Key: D

Itemcode : CR1062

Q17 Who is the writer of 'Swamy and Friends'?
(a) Munshi Premchand
(b) Raman
(c) Max Muller
(d) K. Narayan

Kev: D

Itemcode : CR1063 Q18 Where is the National Institute of Virology situated? : (a) Pune (b) Delhi (c) Kolkata (d) Madras Key: A

Itemcode : CR1064

Q19 The first nuclear reactor in India is
(a) Dhurva
(b) Harsha
(c) Vigula

(c) Vipula (d) Apsara Key: **D**

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Itemcode : CR1065

Q20 The first electric train of India 'Deccan Queen' was run between :

- (a) Howrah and Delhi (b) Bombay and Surat (c) Kalyan and Pune
- (d) New Delhi and Madras
- Key: C

Itemcode : CR1066

Q21 To which of the following country Olympic Airways belong?

- :
- (a) France
- (b) Greece
- (c) Hong Kong
- (d) Indonesia
- Key: **B**

Itemcode : CR1067

Q22 Tiruchirapalli is situated on river : (a) Cauvery (b) Tapti (c) Krishna

(d) Ganga Key: A

Itemcode : CR1068

Q23 The total number of members of UN Security Council is :

(a) 5 (b) 10

(c) 15 (d) 20

Key: C

Itemcode : CR1069

Q24 What plaything was invented by Joe McVicker in 1956? 2 (a) Silly Putty (b) Etch-A-Sketch (c) Lite-Brite (d) Play-Doh

Key: D

Itemcode : CR1070

Q25 Who invented Internal Combustion Engine? 5 (a) Roger Bacon (b) Karl Benz (c) Alan M. Turing (d) Otto Key: D

Itemcode : CR1001

Q26 Halophiles are organisms that require_ 1 (a) a salt concentration of at least 0.2 M (b) high sugar concentration (c) the addition of halogens

(d) all of the above Key: A

Itemcode : CR1002

Q27 The presence of a membrane-enclosed nucleus is a characteristic of (a) prokaryotic cells (b) eukaryotic cells (c) all cells (d) viruses Key: B

Itemcode : CR1003

Q28 Which of the following consist of prokaryotic cells? :

(b) archaea and fungi(c) protists and animals(d) bacteria and archaea

Key: D	
<u>Itemcode</u> : CR1004	
Q29 The cell wall is	
:	
(a) interior to the cell membrane(b) exterior to the cell membrane	
(c) a part of the cell membrane	
(d) interior or exterior, depending on the particular cell	
Key: B	

Itemcode : CR1005

Q30 Prokaryotes stain as Gram-positive or Gram-negative because of differences in the cell

- •
- (a) wall
- (b) cytoplasm(c) nucleus
- (d) chromosome
- Key: **A**

icey.

Itemcode : CR1006

Q31 Pseudopeptidoglycan is a characteristic of the walls of _____.

•

- (a) eukaryotic cells
- (b) bacterial prokaryotic cells
- (c) archaean prokaryotic cells

(d) bacterial and archaean prokaryotic cells Key: ${\mbox{\bf C}}$

Itemcode : CR1007

Q32 The lipopolysaccharide layer (LPS) is a characteristic of the wall of _____

- :
- (a) archaean cells
- (b) Gram-negative bacteria
- (c) bacterial prokaryotic cells(d) eukaryotic cells
- Key: B

Itemcode : CR1008

Q33 Which of the following amino acids are more often to be found in a protein's interior away from aqueous solvent molecules?

(a) Val, Leu, Ile,

- (b) Ser, Thr, Asn,
- (c) Arg, His, Lys,
- (d) All of the above

Key: A

Itemcode : CR1009

Q34 Ignicoccus lives in symbiosis with another archaeon, which is it
(a) Pyrococcus furiosus
(b) Thermococcus gorgonarius
(c) Nanoarchaeum equitans
(d) Pyrodictium brockii
Key: C

Itemcode : CR1010

Q35 The enzyme present in raw milk and is destroyed by adequate pasteurization is :

- -
- (a) Lipase(b) Phosphatase
- (c) Lyase
- (d) Peroxidase
- Key: **B**

Itemcode : CR1011

Q36 The source of Pfu DNA polymerase is

- :
- (a) Pyrococcus
- (b) Pyrobaculum(c) Pyrodictium

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Itemcode : CR1012

Q37 Main host cell receptor of human pathogenic SARS-CoV2 is

:

(a) C-type lectin receptors (CLRs)

- (b) IgSF receptors
- (c) Angiotensin-converting enzyme 2 (ACE2)(d) PtdSer receptors
- (d) Ptu Key: **C**

Itemcode : CR1013

Q38 Bioaugmentation involves

:

(a) eliminating sludge

(b) plants usage for bioremediation

(c) addition of microbes to a cleanup site

(d) bioventing Key: **C**

Itemcode : CR1014

Q39 This cleanup approach includes removal of groundwater or soil from its natural setting to permit bioremediation :

(a) Bioaugmentation

- (b) in situ bioremediation
- (c) ex situ bioremediation(d) Phytoremediation

Key: C

Itemcode : CR1015

Q40 At this stage of wastewater treatment, methanogenic microbes are the most significant

:

- (a) Sludge digestion
- (b) Primary treatment
- (c) Secondary treatment(d) Biological oxidation

Key: A

Itemcode : CR1016

Q41 Prof. Ananda Chakraborty who passed away recently received the first U.S. patent for a GM entity. The entity was :

(a) The GloFish

- (b) a transgenic mouse expressing the growth hormone gene
- (c) Cloned E.Coli
- (d) Pseudomonas engineered to degrade petroleum

Key: D

Itemcode : CR1017

- (a) Escherichia coli
- (b) Haloferax mediterranei
- (c) Deinococcus radiodurans(d) Staphylococcus aureus

Key: **C**

Itemcode : CR1018

Q43 The enrichment of natural waters with organic and inorganic material especially phosphate and nitrogen which leads to excessive growth of photosynthetic microorganisms is called as

(a) Putrefication

- (b) Eutrophication
- (c) Autopurification
- (d) Nitrification
- Key: **B**

Itemcode : CR1019

Q44 This is not an indigenous microbe used for bioremediation :

(a) Pseudomonas aeruginosa
(b) Piscirickettsia salmonis
(c) Phanerochaete sordida
(d) E. coli
Key: **B**

Q45 Weil-Felix reaction is based on sharing of antigens between

- (a) sheep RBCs and EB virus
 (b) mycoplasma and human O group RBCs
- (c) rickettsial antigens and antigens of certain strains of Proteus
- (d) none of these
- Key: **C**

Itemcode : CR1021

Q46 Which of the following is correct?

:

(a) All members of heterotrophic organisms are also members of fungi, but not all members of fungi are members of heterotrophic organisms
(b) All members of fungi are also members of heterotrophic organisms, but not all members of heterotrophic organisms are members of fungi
(c) All members of heterotrophic organisms are members of fungi and all members of fungi are members of heterotrophic organisms
(d) None of the above Key: B

Itemcode : CR1022

Q47 Why the bacterium Treponema pallidum is difficult to culture?

:

- (a) Because it is unable to use carbohydrates as an energy source
- (b) Because it is helically shaped and requires extremely low temperature
- (c) Because it lacks the genes needed for TCA cycle and oxidative phosphorylation
- (d) Because it requires a great deal of water to reproduce

Key: **C**

Itemcode : CR1023

Q48 Which family has received most interest in their development as a biological control agent against insects?

- (a) Reoviridae
- (b) Poxviridae
- (c) Iridoviridae
- (d) Baculoviridae
- Key: D

Itemcode : CR1024

Q49 Virus causing COVID-19 disease is a _____ virus belonging to _____ category of Coronaviridae family.

(a) +ssRNA, alphaCoVs
(b) +ssDNA, alphaCoVs
(c) +ssRNA, betaCoVs

(d) +ssDNA, betaCoVs

Key: C

Itemcode : CR1025

Q50 Entner Doudoroff pathway, a substitute pathway for glycolysis may be present in _____

- •
- (a) Bacteria, archaea
- (b) Fungi, cyanobacteria(c) Algae, ferns
- (d) All of the above
- Key: **D**

Itemcode : CR1026

Q51 Which of the following statements is incorrect for ED pathway?

:

(a) Found in both aerobic and anaerobic prokaryotes

(b) Present mainly in Gram negative bacteria

- (c) Simple sugars and sugar alcohols can be broken down to yield energy
- (d) Phosphofructo kinase-1 is important enzyme to begin glucose catabolism
- Key: **D**

Itemcode : CR1027 Q52 Which of the following statements is untrue for Classical ED pathway and Modified ED pathway?
 (a) Classical ED pathway occurs in prokaryotes where as Modified ED pathway occurs in Archaea (b) In Classical ED pathway phosphorylation occurs at Glucose, in Modified ED pathway the phosphorylation occurs at 2-ketodeoxygluconate or at glycerate (c) In Modified non-phosphorylative ED pathway the formation of 2-keto 3-deoxy 6-phosphogluconate is bypassed unlike the Classical ED pathway (d) None of the above Key: D

:

Itemcode : CR1028

- **Q53** In Prokaryotes, ______ contains the peptidyl transferase that acts as a ribozyme.
- (a) the 23S component of 30S ribosome subunit
- (b) the 23S component of 50S ribosome subunit
- (c) the 16S component of 30S ribosome subunit
- (d) the 16S component of 50S ribosome subunit
- Key: B

:

Itemcode : CR1029

- Q54 The following proposed mechanism could be correct for lowering the activation energy of an enzymatic reaction:
 - (P) Proximity and orientation.
 - (Q) Bond strain.
 - (R) Covalent catalysis.
 - (S) Microenvironment.

(a) PQ

- (b) PR
- (c) PQR(d) PQRS

Key: **D**

Itemcode : CR1030

Q55 The following mentioned inactive precursor of enzymes are specifically grouped as zymogen except one. Pick the odd one out.

- (a) Fibrinogen
- (b) Trypsinogen
- (c) Chymotrypsinogen
- (d) Proelastase

Key: A

Itemcode : CR1031

Q56 What is un-true about these sugars: Cellobiose, Lactose, Maltose, Trehalose?

- (a) All are dissaccharides
- (b) Monomeric components may or may not be identical
- (c) Linked by glycosidic bond
- (d) All are reducing sugars
- Key: D

Itemcode : CR1032

Q57 Which of the following statement is incorrect for Polymorphonuclear leukocytes (or PMNs).

:

(a) Are antigen-presenting cell

- (b) Are derived from bone marrow stem cells
- (c) Can be attracted to the site of an infection following activation of complement
- (d) Are type of phagocytes that can engulf and kill bacteria

Key: A

:

Itemcode : CR1033

Q58 Phosphofructokinase I (PFK I) is characterized by which of the following statements?

(P) It is a major regulatory enzymes in glycolysis

- (Q) ATP inhibits the enzyme by raising the K_m for fructose-1-phosphate
- (R) Fructose-2,6-bisphosphate allosterically activates PFK I
- (S) Citrate is a positive modular of the enzyme.
- (a) PQ
- (b) PR(c) PQR

(d) PRS

Key: D

Itemcode : CR1034

Q59 :	In de Novo biosynthetic pathway of purine nucleotide, Inosinate is the first intermediate formed with a complete purine ring. The Carbon and Nitrogen atoms in the purine ring are contributed by
(b) Ai (c) Ar	minoacids and pentose phosphate minoacids and carbondioxide minoacids, formate and carbondioxide minoacids, formate and pentose phosphate C

Itemcode : CR1035

Q60 The phenomenon of production of ethanol by yeast cells under high concentration of glucose rather than producing biomass by TCA cycle is described as:

(a) Warburg effect

(b) Simpson's effect

- (c) Crabtree effect
- (d) Olivosky's effect

Key: C

	<u>code</u> : CR1036 A bioreactor to which fresh medium is continuously added, while culture liquid containing leftover nutrients, metabolic end products and microorganisms are continuously removed at the same rate is called
(b) F (c) C	aatch fermenter ed-batch fermenter ontinuous fermenter Chemostat D
Item	<u>code</u> : CR1037
Q62 :	Fatty acid biosynthesis is characterized by which of the following statements? (P) The fatty acid synthase of bacteria is a complex of at least seven different polypeptides (Q) Process takes place on the cell membrane in prokaryotic cell (R) Citrate shuttle is important to transport the precursor or substrate in eukaryotic cell (S) The reaction catalyzed by acetyl-CoA carboxylase is the rate-limiting step.
(a) P (b) P	Q

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(D) (c) PQR

(d) PRS

Key: D

Itemcode : CR1038

Q63 Which of the following pairs of antibodies can activate the compliment? 5 (a) Ig A and Ig D

(b) Ig G and Ig M (c) Ig G and Ig E

(d) Ig E and Ig D Key: B

Itemcode : CR1039

Q64 Mast cells have the receptors for ____ : (a) Ig A (b) Ig D (c) Ig E (d) Ig G

Key: C

Itemcode : CR1040

Q65 The stimulation of antigen specific T cells by appropriately presented antigen alone results in _

:

(a) Cytotoxicity

(b) Allergy

- (c) Cell division
- (d) Production of IL-3

Key: **B**

Itemcode : CR1041

Q66 The cytotoxic T cells recognize antigen in association with :

- (a) Class I MHC determinants
- (b) Class II MHC determinants
- (c) Class III MHC determinants
- (d) Class I and class II determinants
- Key: A

Itemcode : CR1042

Q67 Microorganisms involved in Soy sauce fermentation :

- (a) Aspergillus oryzae or Aspergillus sojae (b) Pediococcus halophilus
- (c) Zygosaccharomyces rouxii and Candida species (d) All of the above
- Key: D

Itemcode : CR1043

Q68 After the contact with foreign antigens, body produces specific antibody. These specific antibodies are readily detectable in serum following primary contact with antigen after: :

(a) 1 h

(c) 3-5 weeks(d) Only following a second contact with antigen Key: **B**

Itemcode : CR1044

- Q69 The following viruses are associated with gastroenteritis, except _____
- (a) Astroviruses
- (b) Norwalk-like viruses
- (c) Picornviruses
- (d) Rotaviruses
- Key: C

Itemcode : CR1045

Q70 Intracellular structures formed during many viral infections, called _____, which can directly disrupt cell structure.

- (a) Cytocidal bodies
- (b) Inclusion bodies
- (c) Chromosomal disruptors
- (d) Capsids

Key: **B**

Itemcode : CR1046

Q71 The time from adsorption of a bacteriophage to release of newly synthesized bacteriophage is generally _____

- (a) 1-5 mins (b) 20-40 mins
- (c) 4-6 hours

(d) 1-2 days

Key: B

Itemcode : CR1047

Q72 Precipitation reaction can be converted into agglutination reaction by coating soluble antigen onto ______:

- (a) bentonite particles
- (b) RBCs
- (c) latex particles(d) All of the above
- Key: **D**

Itemcode : CR1048

Q73 The sequence of nucleic acid in a variety of viruses and viral host, will find more similarities

:

- (a) among different viruses than between viruses and their hosts
- (b) among different viral hosts than among different viruses
- (c) between viruses and their hosts than among different viruses
- (d) among different viral hosts than between viruses and their hosts

Key: C

Itemcode : CR1049

Q74 Lysozyme (an endolysin) which will lyse the bacterial cell, releasing the mature virions is present in _____:

- (a) Immediate early phage genes
- (b) Late genes
- (c) Delayed early genes
- (d) All of these
- Key: **B**

Itemcode : CR1050

Q7 :	5 During the first 10 minutes after injection of phage DNA, no phage can be recovered by disrupting the infected bacterium. This is termed as
(b)	Eclipse period Rise period
	Latent period Burst size
Key	

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