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Introduction To Biological Systems

Started on Saturday, 19 February 2022, 10:04 AM

State Finished

Completed on Saturday, 19 February 2022, 11:59 AM

Time taken 1 hour 55 mins

Grade 34.00 out of 35.00 (97%)

Question 1

Correct

Mark 1.00 out of
1.00

FE: Which one is an incorrect Detection Technique:

Select one:

- ☐ a. Northern Blotting- RNA
- ☒ b. ELISA- long non-coding RNA ✓
- ☐ c. Souther Blotting- DNA
- ☐ d. Western Blotting- Protein

The correct answer is: ELISA- long non-coding RNA

Question 2

Correct

Mark 1.00 out of
1.00

FE: If there are 20 kinds of amino acids and they can be assembled in any order, then how many different proteins of 100 amino acids long can theoretically be produced?

Select one:

- ☐ a. 20 X 100
- ☐ b. 20 X 20 X 100
- ☐ c. 100^20
- ☒ d. 20^100 ✓

The correct answer is: 20^100

Question 3

Correct

Mark 1.00 out of

1.00

FE: Each turn of the two polynucleotide chains in DNA is completed after 10 base pairs covering a length of:

Select one:

- ☐ a. 10 Angstrom
- ☒ b. 34 Angstrom ✓
- ☐ c. 20 Angstrom
- ☐ d. 3.4 Angstrom

The correct answer is: 34 Angstrom

Question 4

Correct

Mark 1.00 out of

1.00

FE: In any sequence database, it has atleast the following information:

Select one:

- ☐ a. Sequence
- ☐ b. From which organism the dataset is provided
- ☐ c. Accession Number
- ☒ d. All ✓

The correct answer is: All

Question 5

Correct

Mark 1.00 out of

1.00

FE: Choose the incorrect statement with respect to Epigenetics:

Select one:

- ☒ a. Transgenerational effects not observed ✓
- ☐ b. Regulation through non coding microRNA
- ☐ c. Obesity and nutrition have direct impacts
- ☐ d. Regulation by modification of histone's methylation

The correct answer is: Transgenerational effects not observed

Question 6

Incorrect

Mark 0.00 out of
1.00

FE: Select the false statement:

Select one:

- ☐ a. Tissue Engineering has been successful in creating heart valve and artificial bladder
- ☒ b. Both applications are hypothesis ❌
- ☐ c. Both applications are correct
- ☐ d. Stem cells have application in Bone marrow transplant

The correct answer is: Both applications are correct

Question 7

Correct

Mark 1.00 out of
1.00

FE: In a Monohybrid cross between parental generation: homozygous dominant-Tall plant(TT) and homozygous recessive(tt) -short plant, the gametes formed from F1 generation for F2 cross will be:

Select one:

- ☐ a. All T
- ☐ b. All t
- ☒ c. Plant 1. (T and t) and Plant 2. (T and t) ✔️
- ☐ d. Plant 1. (T and T) and Plant 2. (t and t)

The correct answer is: Plant 1. (T and t) and Plant 2. (T and t)

Question 8

Correct

Mark 1.00 out of
1.00

FE: On hydrolysis a nucleoside would not yield

Select one:

- ☐ a. Purine
- ☒ b. Nucleotide ✔️
- ☐ c. Pentose sugar
- ☐ d. Pyrimidine

The correct answer is: Nucleotide

Question 9

Correct

Mark 1.00 out of
1.00

FE: The source of energy for chemotrophs and phototrophs are

Select one:

- ☐ a. Light and carbon compounds respectively
- ☐ b. Carbon and chemical compounds respectively
- ☐ c. Light and chemical compounds respectively
- ☒ d. Chemical compounds and light respectively ✓

The correct answer is: Chemical compounds and light respectively

Question 10

Correct

Mark 1.00 out of
1.00

FE: In a Monohybrid cross between homozygous dominant-Tall plant and homozygous recessive-short plant, the F1 offsprings will be:

Select one:

- ☐ a. Half Homozygous dominant + half Homozygous recessive
- ☐ b. All Homozygous dominant
- ☐ c. All Homozygous recessive
- ☒ d. All heterozygous ✓

The correct answer is: All heterozygous

Question 11

Correct

Mark 1.00 out of
1.00

FE: What is not component of Tissue Engineering

Select one:

- ☒ a. Fully formed tissue ✓
- ☐ b. Cells
- ☐ c. Scaffolds
- ☐ d. Biological growth factors

The correct answer is: Fully formed tissue

Question 12

Correct

Mark 1.00 out of
1.00

FE: Choose the correct statement about Homology relationships:

Select one:

- ☐ a. All
- ☐ b. Xenologs- Similar sequence in two different organism
- ☒ c. Paralogs- Similar sequence within a single organism ie. functionality diverged ✓
- ☐ d. Orthologs- Similar sequence arising out of horizontal transfer events

The correct answer is: Paralogs- Similar sequence within a single organism ie. functionality diverged

Question 13

Correct

Mark 1.00 out of
1.00

FE: Choose the correct statement for chromosomes:

Select one:

- ☐ a. Joint at the centromere
- ☐ b. Comprised of DNA wrapped around histone proteins
- ☐ c. P- and Q-arm refer to short and long arm of chromosome respectively
- ☒ d. All ✓

The correct answer is: All

Question 14

Correct

Mark 1.00 out of
1.00

FE: Who experimentally proved that DNA contains equal proportions of purine and pyrimidine:

Select one:

- ☒ a. Chargaff ✓
- ☐ b. Meischer
- ☐ c. Watson and Crick
- ☐ d. McLeod and McCarty

The correct answer is: Chargaff

Question 15

Correct

Mark 1.00 out of

1.00

FE: Ct values in RT-PCR do not represent?

Select one:

- ☒ a. Fluorescence ✓
- ☐ b. number of cycle for DNA amplification
- ☐ c. High Ct correlates to low viral load
- ☐ d. Low Ct correlates to high viral load

The correct answer is: Fluorescence

Question 16

Correct

Mark 1.00 out of

1.00

FE: All allelic genes are present on:

Select one:

- ☐ a. Non-homologous chromosome
- ☐ b. Nucleolus
- ☒ c. Homologous chromosome ✓
- ☐ d. None

The correct answer is: Homologous chromosome

Question 17

Correct

Mark 1.00 out of

1.00

FE: Nucleolus are found in ___ and are mainly comprised by ___

Select one:

- ☐ a. Nucleus and RNA + Lipid
- ☒ b. Nucleus and RNA + Protein ✓
- ☐ c. Nucleus and lipid
- ☐ d. Nucleus and carbohydrates

The correct answer is: Nucleus and RNA + Protein

Question 18

Correct

Mark 1.00 out of

1.00

FE: The term genome is used to designate:

Select one:

- ☒ a. The haploid set of chromosome ✓
- ☐ b. Polyploidy
- ☐ c. The diploid set of chromosome
- ☐ d. The triploid set of chromosome

The correct answer is: The haploid set of chromosome

Question 19

Correct

Mark 1.00 out of

1.00

FE: The major events of mitotic prophase include all of the following except:

Select one:

- ☐ a. Nuclear envelope breakdown
- ☒ b. DNA replication ✓
- ☐ c. Nucleolar disaggregation
- ☐ d. Chromosome coiling

The correct answer is: DNA replication

Question 20

Correct

Mark 1.00 out of

1.00

FE: What is incorrect about stem cells?

Select one:

- ☒ a. Red blood cell is an example of pluripotent ESC ✓
- ☐ b. Adult stem cells are found as fraction in fully developed adult tissues
- ☐ c. Embryonic stem cells (ESC) are pluripotent
- ☐ d. Induced pluripotent stem cells can be reprogrammed into ESC

The correct answer is: Red blood cell is an example of pluripotent ESC

Question 21

Correct

Mark 1.00 out of
1.00

FE: What is false between Eukaryote vs Prokaryote:

Select one:

- ☒ a. Only Prokaryotic mRNA undergo splicing ✓
- ☐ b. Prokaryotes undergo replication -> Transcription -> Translation in cytosol
- ☐ c. Only Eukaryotic mRNA undergoes splicing
- ☐ d. Eukaryotes have condensed chromosome

The correct answer is: Only Prokaryotic mRNA undergo splicing

Question 22

Correct

Mark 1.00 out of
1.00

FE: When does replication takes place:

Select one:

- ☒ a. During interphase between two mitotic cycles ✓
- ☐ b. During pachytene and diplotene of meiosis
- ☐ c. During mitosis
- ☐ d. During meiosis

The correct answer is: During interphase between two mitotic cycles

Question 23

Correct

Mark 1.00 out of
1.00

FE: Meristems are stem cells present in human embryos

Select one:

- ☐ True
- ☒ False ✓

The correct answer is 'False'.

Question 24

Correct

Mark 1.00 out of
1.00

FE: Stem cells have following unique properties:

Select one:

- ☐ a. Proliferation
- ☒ b. All ✓
- ☐ c. Unspecialized
- ☐ d. Differentiation

The correct answer is: All

Question 25

Correct

Mark 1.00 out of
1.00

FE: Which of the following is not an enzyme:

Select one:

- ☐ a. Exonuclease
- ☐ b. Restriction Endonuclease
- ☒ c. Zinc finger motif ✓
- ☐ d. Ligase

The correct answer is: Zinc finger motif

Question 26

Correct

Mark 1.00 out of
1.00

FE: Ribosomes are present in:

Select one:

- ☐ a. Only in prokaryotes
- ☐ b. Only in eukaryotes
- ☐ c. None
- ☒ d. Both ✓

The correct answer is: Both

Question 27

Correct

Mark 1.00 out of

1.00

FE: The key components in tissue engineering are:

Select one:

- ☒ a. All ✓
- ☐ b. Biological factors (example growth factors/ chemical signals)
- ☐ c. Scaffold
- ☐ d. Living Cells

The correct answer is: All

Question 28

Correct

Mark 1.00 out of

1.00

FE: Bioinformatics databases contain information on following except

Select one:

- ☒ a. Nomenclature of newly discovered species ✓
- ☐ b. Nucleotide sequences
- ☐ c. non-coding RNA datasets
- ☐ d. Protein structures

The correct answer is: Nomenclature of newly discovered species

Question 29

Correct

Mark 1.00 out of

1.00

FE: After meiosis I, the resultant daughter cells have:

Select one:

- ☐ a. four times as much DNA as a haploid gamete
- ☐ b. as much DNA as a haploid gamete
- ☒ c. twice as much DNA as a haploid gamete ✓
- ☐ d. All

The correct answer is: twice as much DNA as a haploid gamete

Question 30

Correct

Mark 1.00 out of

1.00

FE: Gram-positive cell wall contain a higher percentage of ___ than those of Gram-negative cells

Select one:

- ☐ a. LPS
- ☒ b. Peptidoglycan ✓
- ☐ c. Teichoic Acid
- ☐ d. N-Acetyl Glucosamine

The correct answer is: Peptidoglycan

Question 31

Correct

Mark 1.00 out of

1.00

FE: Saying one has active immunity after contracting disease means:

Select one:

- ☐ a. Increasing blood quantity
- ☐ b. Increasing heart beat
- ☐ c. Resistance developed before disease
- ☒ d. Resistance developed after the disease ✓

The correct answer is: Resistance developed after the disease

Question 32

Correct

Mark 1.00 out of

1.00

FE: Antibodies are synthesized by-

Select one:

- ☐ a. Killer T-cells
- ☐ b. Phagocytes
- ☐ c. Helper T-cells
- ☒ d. B-cells ✓

The correct answer is: B-cells

Question 33

Correct

Mark 1.00 out of
1.00

FE: Following are examples of Secondary metabolites except:

Select one:

- ☐ a. Gums
- ☐ b. Essential Oils
- ☐ c. Antibiotics
- ☒ d. Lactic Acid ✓

The correct answer is: Lactic Acid

Question 34

Correct

Mark 1.00 out of
1.00

FE: The cell wall is the secretion product of:

Select one:

- ☐ a. None
- ☐ b. Vacuole
- ☒ c. Cytoplasm ✓
- ☐ d. Plasma membrane

The correct answer is: Cytoplasm

Question 35

Correct

Mark 1.00 out of
1.00

FE: Test tube babies refers to:

Select one:

- ☐ a. Way to create babies
- ☒ b. All ✓
- ☐ c. In vitro fertilization (IVF)
- ☐ d. Creating embryo by putting eggs and sperms together

The correct answer is: All