Test Name : BT101 Quiz 03

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Test Start Time	Marks Scored	Total Questions
2021-05-30 09:30:15	16.375 / 25.0	45

Attempted Questions	Correct Questions	Incorrect Questions
44	33	11

Skipped Questions	Pending Evaluation
1	0

Status of application for viewing evaluated answers: **Not Applied**

Actions: Apply for viewing evaluated answers

List of Sections

Section - 1

Marks per question : 0.5 | **Marks Scored : 5.13** | Negative marks per question : 25%

Q No.	Q. Type	Status	Marks	Comment	
1	Multiple Choice - Single Answer	✖	-0.12	-	Hide Answer

Approximately, how many liters (nearest number) of air does an adult at rest inhale and exhale in a day?

- ◉ 550
- ○ 48
- ○ 11000
- ○ 7600

2	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

Keratin is responsible for producing the pigmentation in our hair, skin, and eyes.

- ◉ False
- ○ True

3	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

Bronchioles are the balloon-shaped structures in the lungs.

- ◉ False

True

4 Multiple Choice - Single Answer ✖ -0.12 - Hide Answer

Approximately 65-70% of saliva in the oral cavity is produced by the sublingual glands.

False

True

5 Multiple Choice - Single Answer ✖ -0.12 - Hide Answer

Approximately 250 million alveoli are present in the human lungs.

False

True

6 Multiple Choice - Single Answer ✔ 0.5 - Hide Answer

Which one of the following hormones is associated with Robert Wadlow?

Thyroxine

Pituitary hormone

Adrenaline

Growth hormone

7 Multiple Choice - Single Answer ✔ 0.5 - Hide Answer

Epidermis is a highly vascularized layer of the skin.

False

True

8 Multiple Choice - Single Answer ✔ 0.5 - Hide Answer

The pharynx food pipe is a muscular tube that passes the food to the stomach with the help of a series of contractions called peristalsis.

False

True

9 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

The enzyme lipase is responsible for the digestion of chapati and rice in mouth.

False

True

10 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Erythrocytes and leukocytes do NOT contain nucleus.

False

True

11 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

The hypodermis layer below the skin acts as an energy reserve.

False

True

12 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Which one of the following hormones is also generally called a “love” hormone?

Progesterone

Testosterone

Estrogen

Oxytocin

13 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

The reticular dermis layer of skin is responsible to determine the pattern of finger prints.

False

True

14	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

Bile is stored and concentrated in liver.

False

True

Section - 2 Marks per question : 1.0 | **Marks Scored : 0.5** | Negative marks per question : 25%

Q No.	Q. Type	Status	Marks	Comment	
1	Multiple Choice - Multiple Answers	✖	-0.25	-	Hide Answer

Which of the following is known to contain ‘good’ or ‘friendly’ bacteria to restore or improve the gut flora?

Probiotics

Prebiotics

Synbiotics

Proteobiotics

2	Multiple Choice - Multiple Answers	✖	-0.25	-	Hide Answer

Which of the following cell types are present in the dermis layer of the skin?

Mast cells

Fibroblasts

Keratinocytes

Macrophages

3	Multiple Choice - Multiple Answers	✔	1.0	-	Hide Answer

Which of the following hormones have opposing functions to each other with respect to calcium metabolism?

Progesterone

- [x] Calcitonin
- [ ] Melatonin
- [x] Parathyroid hormone

Section - 3 Marks per question : 1.0 | **Marks Scored : 2.0** | Negative marks per question : 25%

Q No.	Q. Type	Status	Marks	Comment	
1	Multiple Choice - Single Answer	✔	1.0	-	Hide Answer

Match the hormones in **GROUP I** with their corresponding function in **GROUP II**.

GROUP I	GROUP II
P. Melatonin	1. stimulates the carbohydrate, lipid and protein metabolism
Q. Thyroxine	2. fight or flight response
R. Adrenaline	3. regulates sleep-wake cycles
S. Aldosterone	4. regulates blood pressure and electrolyte balance

- ( ) P-3, Q-4, R-2, S-1
- ( ) P-2, Q-1, R-4, S-3
- ( ) P-1, Q-2, R-4, S-3
- ( ) P-3, Q-1, R-2, S-4

Q No.	Q. Type	Status	Marks	Comment	
2	Multiple Choice - Multiple Answers	✔	1.0	-	Hide Answer

Which of the following statement(s) is/are INCORRECT about endocrine glands?

- [x] Endocrine glands are non-vascularized glands.
- [ ] Endocrine glands are ductless glands.
- [x] Salivary glands and mammary glands are examples of endocrine glands
- [x] Endocrine glands are highly localized glands.

Section - 4 Marks per question : 0.5 | **Marks Scored : 8.75** | Negative marks per question : 25%

Q No.	Q. Type	Status	Marks	Comment	
1	Multiple Choice - Single Answer	⚠	0.0	-	Hide Answer

Calculate the weight in grams of DNA stretching from earth to moon (~3,20,000 km).

The DNA weighs about 1 X10^{-18} g per 1,000 nucleotide pairs; each base pair extends 3.4 A°.

- 0.00940 g
- 0.94000 g
- 0.0099 g
- 0.09400 g
- 0.00094 g

2	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

Which one of the following is *true* of the pentoses found in nucleic acids?

- The pentoses are in a planar configuration.
- C-5 and C-1 of the pentose are joined to phosphate groups.
- The straight-chain and ring forms undergo constant interconversion.
- The pentoses are always in the beta-furanose forms.
- The bond that joins nitrogenous bases to pentoses is an *O*-glycosidic bond.

3	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

When double-stranded DNA is heated at neutral pH, which change does *not* occur?

- The helical structure unwinds.
- The hydrogen bonds between A and T break.
- The viscosity of the solution decreases.
- The absorption of ultraviolet (260 nm) light increases.
- The covalent N-glycosidic bond between the base and the pentose breaks.

4	Multiple Choice - Single Answer	✖	-0.12	-	Hide Answer

A somatic cell has 46 chromosomes in its diploid stage. How many chromosomes are present in the following?

I. Somatic Cells II. Anaphase (mitosis) III. Metaphase II (meiosis) IV. Gametes

I:23, II:46, III:46, IV:23

I:46, II:46, III: 23, IV:23

I:46, II:23, III:46, IV:23

I:46, II:92, III:23, IV:23

I:23, II:23, III:23, IV:23

5	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

A diploid organism has 116 chromosomes. How many chromosomes are present in the gametes of this organism?

29

99

16

0

58

6	Multiple Choice - Single Answer	✖	-0.12	-	Hide Answer

The fruit fly has eight chromosomes. During the S phase, these chromosomes are duplicated. How many chromatids are present after the S phase in a fruit fly?

1

6

4

8

16

7	Multiple Choice - Single Answer	✖	-0.12	-	Hide Answer

An allele is:

one of several possible forms of a gene

All of the options

another word for a gene

a homozygous genotype

a heterozygous genotype

8 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

The idea that for any particular trait, the pair of alleles of each parent separate and only one allele from each parent passes to an offspring is Mendel's principle of:

dominance

independent assortment

All of the options

segregation

hybridization

9 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Phenotype refers to the _____ of an individual.

genetic makeup

recessive alleles

dominant alleles

actual physical appearance

All of the above

10 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Purines have _____ ring(s), (each) containing _____ nitrogen(s), whereas pyrimidines have _____ ring(s), (each) containing _____ nitrogens.

1; 4; 1; 2

1; 1; 1; 1

2; 4; 1; 2

2; 2; 1; 1

2; 1; 1; 2

11	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

The DNA oligonucleotide abbreviated pATCGAC:

- ◉ has a hydroxyl at its 3′ end.
- ○ has seven phosphate groups.
- ○ violates Chargaff's rules.
- ○ has an A at its 3′ end.
- ○ has a phosphate on its 3′ end.

12	Multiple Choice - Single Answer	✖	-0.12	-	Hide Answer

What is the most striking about the following findings?

MENDEL'S FINDING FOR THE F2 GENERATION

F_1 Parents	purple	axial	yellow	round	inflated	green	tall
F_2 Phenotype	705 purple 224 white	651 axial 207 terminal	6022 yellow 2001 green	5474 round 1850 wrinkled	882 inflated 299 constricted	928 green 152 yellow	787 tall 277 dwarf
ratio	3.15 : 1	3.14 : 1	2.82 : 1	2.96 : 1	2.95 : 1	3.01 : 1	2.84 : 1

- ◉ The reappearance of the recessive trait in each case (e.g. short)
- ○ The number of plants that Mendel analysed
- ○ The similarity in the ratios of dominant to recessive traits (~3:1)
- ○ No ratio was exactly 3:1
- ◉ All the above

13	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

In which of the Mitotic phases the morphology of the chromosome can be best studied?

- Telophase
- Interphase
- Anaphase
- Metaphase
- Prophase

14	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

In a Mendelian cross between pea plants that are heterozygous for Flower colour (Rr), what is the probability of the offspring being homozygote?

- 0 (No homozygote)
- 3
- 1/3
- 1 (All homozygote)
- 1/2

15	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

Triple-helical DNA structures can result from Hoogsteen (non Watson-Crick) interactions. These interactions are primarily:

- covalent bonds involving the bases.
- covalent bonds involving deoxyribose.
- hydrophobic interactions involving the bases.
- hydrogen bonds involving the bases.
- hydrogen bonds involving deoxyribose.

16	Multiple Choice - Single Answer	✔	0.5	-	Hide Answer

A double stranded DNA molecule of length 3.4 mm has 30000 cytosine, then calculate the total number of thymine nucleotides present in DNA?

- 400

- 470000
- 47000
- 4700
- 200

17 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

The difference between a ribonucleotide and a deoxyribonucleotide is:

- a deoxyribonucleotide has an —H instead of an —OH at C-3.
- a deoxyribonucleotide has an —H instead of an —OH at C-2.
- a ribonucleotide is a pyranose, deoxyribonucleotide is a furanose.
- a ribonucleotide has more structural flexibility than deoxyribonucleotide.
- a ribonucleotide has an extra —OH at C-4.

18 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

In a controlled laboratory setting, 12 cells are prompted to undergo meiosis. How many cells will be present at the end of meiosis II?

- 48
- 12
- 10
- 24
- 36

19 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

For the helix in double-stranded B-form DNA, the majority of the stability can be attributed to:

- interactions along the phosphate backbone.
- base-pairing interactions via H-bonds.
- ionic interactions with metal ions.
- covalent bonds between adjacent bases in one strand.

base-stacking interactions via van-der-Waals interactions.

20 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Based on Chargaff's rules, which of the following are possible base compositions for double-stranded DNA?

%A	%G	%C	%T	%U
5	45	45	5	0

%A	%G	%C	%T	%U
20	20	20	20	20

%A	%G	%C	%T	%U
35	15	35	15	0

All of the above

None of the above

21 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Match the type of bond with the role below:

Bond type	Role
(a) phosphodiester	___ links base to pentose in nucleotide
(b) *N*-glycosidic	___ joins adjacent nucleotides in one strand
(c) phosphate ester	___ joins complementary nucleotides in two strands
(d) hydrogen	___ difference between a nucleoside and a nucleotide

d, b, c, a.

b, d, a, c.

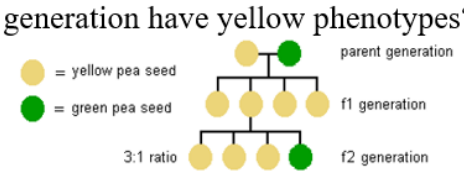
c, a, d, b.

a, c, b, d.

b, a, d, c.

22 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Assuming that both parent plants in the diagram below are homozygous, why would all of the F1 generation have yellow phenotypes?



- because both parents passed on yellow alleles
- because the F1 genotypes are homozygous
- All of the options
- because yellow is dominant over green

23 | Multiple Choice - Single Answer | ✖ | -0.12 | - | Hide Answer

Which of the following is typically NOT found in normal somatic cells of human male?

- Diploid nucleus
- Y chromosome
- The entire genetic information of the somatic cells
- Forty-four autosomes
- An inactivated X-chromosome

24 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

Which of the following deoxyoligonucleotides will hybridize with a DNA containing the sequence (5′)AGACTGGTC(3′)?

- (5′)GACCAGTCT(3′)
- (5′)CTCATTGAG(3′)
- (5′)TCTGGATCT(3′)
- (5′)TCTGACCAG(3′)
- (5′)GAGTCAACT(3′)

25 | Multiple Choice - Single Answer | ✔ | 0.5 | - | Hide Answer

In nucleotides and nucleic acids, syn and anti conformations relate to:

- rotation around the phosphodiester bond.

base stereoisomers.

sugar stereoisomers.

sugar pucker.

rotation around the sugar-base bond.

26 | Multiple Choice - Single Answer | ✖ | -0.12 | - | Hide Answer

Which of the following ds-DNA molecules would denature at a lower temperature?

30 base-pair molecule in which 40% of the bases are guanines

40 base-pair molecule in which 25% of the bases are adenines

40 base-pair molecule in which 35% of the bases are adenines

10 base-pair molecule in which 20 % of the bases are cytosines

20 base-pair molecule in which 10% of the bases are thymines