

11. Which of the following contributes nitrogen atoms to purine and pyrimidine ?
 a) Aspartate b) Carbamoyl phosphate c) Carbon dioxide d) Glutamate
12. Which of the following is a required substrate for purine biosynthesis ?
 a) 5- methyl thymidine b) Ribose phosphate c) PRPP d) Uracil
13. Which of the following is an analogue of hypoxanthine ?
 a) Allopurinol b) Ribose phosphate c) PRPP d) Uracil
14. The conversion of Inosine mono phosphate to AMP requires
 a) ATP b) GTP c) GDP d) UMP
15. Purine nucleotide biosynthesis can be inhibited by which of the following ?
 a) GTP b) UDP c) AMP d) IMP
16. Which out of the following catalyses a rate limiting step in haem biosynthesis?
 a) ALA synthase b) ALA dehydratase c) PBG deaminase d) Porphrinogen oxidase
17. Which out of the following is a haemo protein?
 a) ALT b) Phenylalanin hydroxylase c) Thiokinase d) Cytochrome P450
18. Which of the following is a precursor of haem biosynthesis?
 a) Alanine b) Glycine c) Succinyl CoA d) b&c
19. The major detoxification reactions involved in phase -1 are all except:
 a) Oxidation b) Reduction c) Hydrolysis d) Epoxidation
20. Which of the following acts as a source of sulfate?
 a) Cysteine b) Hydrogen sulphide c) Phospho adenosine phospho sulfate d) Methionine

Q3] differentiate between each two of the following::

- Demanination and transamination
- HDL and LDL metabolism
- Phase I and Phase II detoxification pathways

6 marks
 2 marks
 2 marks
 2 marks

Q3] Discuss biochemically the following:

- Carnitine shuttle system
- Amonia intoxication
- Melatonin biosyntheis from tryptophan amino acid
- Energy produced from B oxidation of palmitic acid (carbon number = 16)
- Post transcription modification of euokaryotic mRNA

9 marks
 1 marks
 2 marks
 2 marks
 2 marks
 2 marks

انتهت الاسئلة

Best wishes

Dr. Mabrouk Abd Elqaim

Mabrouk Abd Elqaim

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Dr. Mabrouk Abd Elqaim

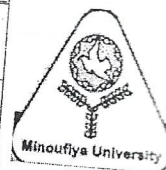
Mabrouk Abd Elqaim



Faculty of
Vet. Med.

Undergraduate Final Examination

Course code & name	213 Biochemistry and Chemistry of Nutrition		
Department	Biochemistry and Chemistry of Nutrition		
Prog.	BVSc	No of Ex. papers	220
Date	9/6/2019	Time	2h
Marks	25 marks (50% of Total Marks)		



Menoufia
University

All Questions Should be Answered

Q1] Illustrate the biochemical reactions catalyzed by the following enzymes:

- Glutamin phospho ribose pyri phosphate transamidase
- Tryptophan hydroxylase
- HMGCoA synthase
- Thiokinase (Acy CoA synthetase)
- Arriginase

5 Marks

1 mark

1 mark

1 mark

1 mark

1 mark

Q2] Choose the correct answer for all of the following:

1. S- Adenosyl Methionine is required for the synthesis of which of the following?

- Thyroid hormone
- Melanin
- Epinephrine
- Serotonin

5 Marks

2. Which of the following enzymes requires ATP to mediate its reactions ?

- Argino Succinate lyase
- Argino Succinate synthetase
- Arginase
- Glutaminase

3. Which of the following amino acids is not converted to Acetyl co A ?

- Tyrosine
- Leucine
- Tryptophan
- Valine

4. All of the following compounds are synthesized by transmethylation except

- Choline
- Epinephrine
- Creatine
- Ethanolamine

5. Histamine is synthesized from Histidine by which of the following processes?

- Deamination
- Decarboxylation
- Transamination
- Dehydrogenation

6. Which of the following statements best describes LDL?

- It has the most TG and the least protein
- It has more TG than VLDL
- It has the lowest TG content
- It has the highest cholesterol content.

7. Which of the following apoproteins is an activator of lipoprotein lipase

- Apo A
- Apo B
- Apo C II
- Apo D

8. Which of the following lipoproteins are the major carriers of Triacyl glycerol ?

- IDL and LDL
- VLDL and LDL
- HDL and VLDL
- Chylomicrons and VLDL

9. Glucose can be converted to Glycerol-3-P through as intermediates?

- Glycerol
- Dihydroxy acetone phosphate
- Acetyl co A
- Pyruvate

10. NADPH required for the fatty acid synthesis can be generated from

- HMP pathway
- Glycolysis
- TCA cycle
- All of the above

39. Zymogen is

- a) Enzyme poison
- b) Enzyme modulator
- c) Enzyme precursor
- d) Enzyme inhibitor

40. Enzyme generally have.....

- a) Same pH and temperature optima
- b) Same pH but different temperature optima
- c) Different pH but same temperature optima
- d) Different pH and different temperature optima

Q2] Discuss all of the following with diagram and chemical formula whenever possible:

10 Marks

- a. Isomerism of monosaccharides 2 mark
- b. Secondary structure of protein 2 mark
- c. Types and causes of rancidity 2 mark
- d. Enzymes specificity 2 mark
- e. Free radicals (Def., sources, importance and harmful effects) 2 mark

Q3] Illustrate the chemical formula all of the following:

5 marks

- a. Phosphatedic acid 1 mark
- b. Indol containing amino acid 1 mark
- c. Ceramide 1 mark
- d. Hydroxy glucogenic amino acid 1 mark
- e. Condratine sulphate C 1 mark

انتهت الاسئلة

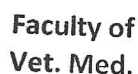
Best wishes


Dr. Mabrouk Abd Eldaim

ABD ELDO

27. Which of the following is an animal sterol?
 a) Ergo sterol b) Stigma sterol c) Sitosterol d) Cholesterol
28. Which out of the following is an inter mediate for the synthesis of phospholipids and Triacylglycerols?
 a) Diacyl glycerol b) Cholesterol c) Choline d) Inositol
29. All except one are fatty acids with 18 carbon atoms
 a) Oleic acid b) Linolenic c) Palmitic acid d) Stearic acid
30. Glycerol is required for the formation of all of the following except.....
 a) Glucose b) Triacyl glycerol c) Phospholipids d) Glycolipids
31. The number of mgms of KOH required to neutralize the free and combined fatty acids in one gram of a given fat is called
 a) Acid number b) Polenske number c) Saponification number d) Iodine number
32. Sphingosine is NOT present in
 a) Cerebrosides b) Gangliosides c) sphigomyelin d) Plasmalogen
33. Which nitrogenous base out of the following is present in lecithin ?
 a) Choline b) Adenine c) Ethanolamine d) all of the above
34. The monomeric deoxyribonucleotide units of DNA include all EXCEPT....
 a) Deoxyadenylate b) Deoxyguanylate c) Deoxycytidylate d) Deoxyuridylate
35. Ribonucleic acid (RNA) is a polymer of purine and pyrimidine ribonucleotides linked together by
 a) Hydrogen bonds c) Hydrophobic interactions
 b) 5'-3' Phosphodiester linkages d) 3'-5' Phosphodiester linkages
36. Enzymes are composed mainly of
 a) Carbohydrate b) RNA c) Proteins d) Fats
37. The term apoenzyme is applicable to
 a) Simple enzyme b) Protein part of conjugate enzyme
 c) Organic cofactor of a conjugate enzyme
 d) Inorganic cofactor of a conjugate enzyme
38. Enzymes
 a) Do not require activation energy
 b) Do not change requirement of activation energy
 c) Increase requirement of activation energy
 d) Lowest requirement of activation energy

12. A Polysaccharide formed by $\beta 1 \rightarrow 4$ Glycosidic linkages is
a) Starch b) Dextrin c) Glycogen d) Cellulose
13. Which out of the following is NOT a non standard amino acid?
a) Hydroxy Proline b) Beta Alanine c) Ornithine d) Arginine
14. Which out of the following is NOT a conjugated protein?
a) Albumin b) Lipoprotein c) Glycoprotein d) Flavoprotein
15. Which of the following amino acids is detected by Sakaguchi test?
a) Tyrosine b) Tryptophan c) Alpha amino acids d) Arginine
16. All of the following amino acids are both glucogenic and ketogenic EXCEPT
a) Isoleucine b) Leucine c) Tyrosine d) Phenyl alanine
17. All the below mentioned proteins are metalloproteins EXCEPT
- a) Carbonic anhydrase b) Xanthine oxidase
c) Lactate dehydrogenase d) Superoxide dismutase
18. The highest concentration of cystine can be found in
- a) Melanin b) Keratin c) Collagen d) Myosin
19. is responsible for primary structure of protein.
a) Peptide bond b) Hydrogen bond c) Ionic bond d) hydrophobic bond
20. Example of basic protein is.....
a) Globulin b) Gliadins c) Histone d) Albumin
21. is a covalent bond
a) hydrophobic bond b) Hydrogen bond c) Ionic bond d) disulphid bond
22. Example of branched chain amino acid is.....
a) Leucine b) Glutamate c) glycine d) Tyrosine
23. is basic amino acid
a) Aspartic acid b) Lysine c) Glutamic acid d) Tryptophane
24. Which out of the following alcohols is used for waxes
a) Cholesterol b) Glycerol c) Cetyl Alcohol d) Sphingosine
25. Which out of the following is NOT a Glycerophospholipid?
a) Cardiolipin b) Plasmalogen c) Lecithin d) Sphingomyelin
26. All are non-essential fatty acids EXCEPT
- a) Palmitic acid b) Linolenic c) Oleic acid d) Stearic acid



 <p>Faculty of Vet. Med.</p>	Undergraduate Final Examination			
	Course code & name		123 Biochemistry and Chemistry of Nutrition	
	Department		Biochemistry and Chemistry of Nutrition	
	Prog.	BVSc	No of Ex. papers	170
	Date	9/6/2019	Time	2h
	Marks 25 marks (50% of Total Marks)			



Menoufia University

All Questions Should be Answered

Q1] Choose the correct answer for all of the following:

1. Sucrose is composed of

- a) Glucose and Glucose
b) Glucose and Fructose
c) Glucose and Galactose
d) Fructose and Galactose

2. which of the following represent aldo tetrose?

- a) Glyceraldehyde b) Dihydroxyacetone c) Erythrose d) Arabinose

3. Fructose and Ribulose are

- a) Epimers b) Anomers c) Ketoses d) Ketose- Aldose isomers

4. Invert sugar is

- a) Starch b) Fructose c) Glucose d) Hydrolytic product of Sucrose

5. Which of the following is not a homopolysaccharide?

- a) Starch b) Heparin c) Glycogen d) Cellulose

6. Which out of the following is a fructosan?

- a) Glycogen b) Agar c) Inulin d) Cellulose

7. α -D-Glucose and β -D-Glucose are

- a) Stereo isomers b) Anomers c) Keto- Aldose Isomers d) Optical isomers

8. Which out of the following is a carbohydrate with 6 carbon atoms and a keto group as the functional group?

- a) Glucose b) Fructose c) Lactose d) Ribolouse

9. N- Acetyl galactoseamin is a

- a) Sugar acid b) Amino sugar acid c) Amino sugar d) Sugar alcohol

10. Which of the following sugars is laevorotatory predominantly?

- a) Starch b) Sucrose c) Fructose d) Glucose

11. All are glucosans (polymers of glucose) EXCEPT

- a) Glycogen b) Starch c) Cellulose d) Inulin

70. amino acid is essential for synthesis of spermidine and spermine.
 a) Glutamate b) Glycine c) Serine d) Methionine
71. Which of the following provides nitrogen atoms to purine and pyrimidine?
 a) Aspartate b) Carbamoyl phosphate c) Carbon dioxide d) Glutamate
72. Which of the following is a required substrate for purine biosynthesis?
 a) 5- methyl thymidine b) Adinine c) PRPP d) Uracil
73. The conversion of Inosine mono phosphate to GMP requires
 a) ATP b) GTP c) GDP d) UMP
74. The conversion of Inosine mono phosphate to AMP requires
 a) ATP b) GTP c) GDP d) UMP
75. inhibits purine nucleotide biosynthesis.
 a) GTP b) UDP c) AMP d) IMP
76. For De novo of nucleotide containing purine base is formed first.
 a) IMP b) AMP c) GMP d) ATP
77. enzyme is involved in de novo synthesis of pyrimidine base.
 a) Glutamate dehydrogenase b) Carbamoyl phosphate synthase I
 c) Ornithine transcarbamylase d) Carbamoyl phosphate synthase II
78. The main end product of purine catabolism is.....
 a) urea b) uric acid c) ammonia d) guanine
79. The main end product of pyrimidine catabolism is.....
 a) urea b) uric acid c) beta amino acid d) alpha amino acid
80. Cleavage of pyrimidine ring during its catabolism requires for its reduction.
 a) NADPH b) NADH c) FADH₂ d) FMN

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Best wishes

Prof. Dr. Mabrouk Abd Elqaim

45. amino acid gives melatonin upon its metabolism.
 a) Methionine b) Valine c) Tryptophan d) Histidine
46. Biochemical reactions for urea synthesis begins in
 a) Cytoplasm b) Mitochondria c) Golgi apparatus d) lysosome
47. Blood urea concentration increases in case of
 a) Liver cirrhosis b) Pregnancy c) Renal failure d) Urea cycle
48. Dopamine is derived from amino acid upon its metabolism.
 a) Aspartate b) Glutamate c) Tryptophan d) phenylalanine
49. The brain protect itself from hyperammonemia by synthesis of
 a) Urea b) Glutamine c) Glutamate d) Asparagine
50. Transamination reaction requires as a coenzyme.
 a) Co A b) Pyridoxal-P c) Folic acid d) Cobalamin
51. Negative nitrogen balance can be occurred in
 a) Pregnancy b) Growth c) Convalescence d) long lasting
52. Glutamate dehydrogenase requires as a coenzyme.
 a) FMN b) FAD c) FADH₂ d) NAD/NADP
53. L amino acid oxidase requires as a coenzyme.
 a) NAD b) FAD c) NADP d) FMN
54. Serine is a biosynthetic precursor for amino acid.
 a) Methionine b) Glycine c) Arginine d) Lysine
55. Creatine phosphate is a metabolite derived from amino acid upon its metabolism.
 a) Methionine b) Glycine c) Arginine d) Lysine
56. Serotonin is derived from amino acid upon its metabolism.
 a) Cysteine b) Glycine c) Tryptophan d) Lysine
57. is the main pathway by which NH₂ of most a.a. is released in the form of NH₃.
 a) Deamination b) Decarboxylation c) Transdeamination d) Transamination
58. S- Adenosyl Methionine is required for the synthesis of
 a) Thyroid hormone b) Melanin c) Epinephrine d) Serotonin
59. Methionine is a biosynthetic precursor for amino acid.
 a) Tryptophan b) Glycine c) Cysteine d) Lysine
60. Transmethylation is necessary for synthesis of the following compound
 a) serotonin b) epinephrine c) ornithine d) ethanolamine
61. Arginine is a biosynthetic precursor for amino acid.
 a) Cysteine b) ornithine c) Tryptophan d) Lysine
62. amino acid is the formamidine donor for creatine synthesis.
 a) Methionine b) Threonine c) Lysine d) Arginine
63. amino acid is essential for biosynthesis of glutathione.
 a) Phenylalanine b) ornithine c) glutamic d) Lysine
64. amino acid is the major component of the collagen.
 a) Hydroxyproline b) Threonine c) serine d) Histidine
65. amino acid act as a lipotropic factor.
 a) Methionine b) Threonine c) Cysteine d) Proline
66. The source of thiol group of glutathione is
 a) Cysteine b) glycine c) Threonine d) glutamate
67. Hyperammonemia Type 1 occurs due to deficiency of
 a) Carbamoyl phosphate synthase II b) glutamate dehydrogenase
 c) Carbamoyl phosphate synthase I d) glutamate transaminase
68. enzyme is responsible for dissociation of urea from arginine.
 a) Carbamoyl phosphate synthase II b) arginase
 c) Ornithine transcarbamylase d) ALT
69. amino acid is a methyl donor.
 a) Methionine b) Glutamine c) Cysteine d) Glutamate

20. supplies 2 carbons to elongate the fatty acid chain.
 a) Acetyl co A b) Malonyl co A c) β - Keto acyl co A d) Pyruvate
21. is required for conversion of Acetyl CoA to Malonyl CoA.
 a) Biotin b) ADP c) NADPH d) Folic acid.
22. The activation of long chain fatty acids requires
 a) ATP b) ATP and Co A c) ATP and fatty acyl CoA d) Carnitine shuttle system
23. Each turn of β -oxidation reduced the length of the fatty acyl CoA by carbon atoms
 a) 1 b) 2 c) 3 d) 4
24. β -oxidation of fatty acids can be enhanced by
 a) NADPH b) NAD + c) FADH₂ d) NADH⁺ H
25. The absorbed fats are transported in the circulation in the form of
 a) Micelles b) Liposomes c) Fatty acid – Albumin complex d) Chylomicrons
26. catalyzes the conversion of fatty acid into fatty acyl CoA
 a) Thiolase b) Acyl Co A dehydrogenase c) Thiokinase d) Fatty acid synthase
27. Fatty acid with 18 carbon atoms will undergo cycles of beta oxidation
 a) 7 b) 9 c) 6 d) 8
28. generates NADPH required for the fatty acid synthesis.
 a) Pentose phosphate pathway b) Glycolysis c) TCA cycle d) Gluconeogenesis
29. is NOT required for fatty acid synthesis.
 a) Bicarbonate b) NADPH c) Biotin d) Vitamin B12
30. All of the following lead to ketosis EXCEPT
 a) Starvation b) Diabetes mellitus c) High protein diet d) High carbohydrate diet
31. The main function of LDL is to transport to the peripheral tissues
 a) TG b) bile salt c) cholesterol d) protein
32. is the main legend for LDL receptor.
 a) Apo AII b) Apo B100 c) Apo CII d) Apo B48
33. Scavenger receptor class A (SR-A) can bind and mediate the endocytosis of
 a) LDL b) VLDL c) HDL d) oxidized LDL
34. The ligand of scavenger receptor class-B type I (SR-BI) in the liver is
 a) LDL b) VLDL c) Chylomicron d) HDL
35. The main component of HDL is.....
 a) Apo AI b) Apo B100 c) Apo CII d) Apo B48
36. reaction is responsible for conversion of glutamate into gamma amino butyric acid (GABA).
 a) Transamination b) Decarboxylation c) Deamination d) Hydroxylation
37. reaction is responsible for conversion of histidine into histamine.
 a) Deamination b) Decarboxylation c) Transamination d) Hydroxylation
38. amino acid is found in the plasma in highest concentration.
 a) Alanine b) Arginine c) Glutamate d) valine
39. Phenyl Alanine upon its hydroxylation gives
 a) Tyrosine b) tryptophan c) glycine d) Alanine
40. Detoxification of ammonia in the brain results in formation of higher amount of amino acid.
 a) Alpha keto glutarate b) Glutamate c) GABA d) Glutamine
41. enzyme requires ATP to mediate its reactions.
 a) Argino Succinate lyase b) Ornithine transcarbamoylase
 c) Arginas d) Argino Succinate synthetase
42. amino acids is NOT converted to Acetyl Co A.
 a) Tyrosine b) Leucine c) Tryptophan d) Valine
43. is produced in both TCA cycle and the Urea cycle.
 a) α - Keto glutarate b) Succinyl co A c) Oxalo acetate d) Fumarate
44. is the nitrogen acceptor in transamination reaction.
 a) α - Keto glutarate b) Pyruvate c) Oxaloacetate d) Acetoacetate



Faculty of
Vet. Med.

Undergraduate Final Examination

Course code & name	213 Biochemistry and Chemistry of Nutrition		
Department	Biochemistry and Chemistry of Nutrition		
Prog.	BVSc	No of Ex. papers	200
Date	23/6/2021	Time	2h
Marks	25 marks (50% of Total Marks)		



Choose the correct answer for all of the following:

- is a ketone body
a) Acetyl CoA b) Lecithin c) Beta hydroxy butyrate d) Succinyl CoA
- Thiolase enzyme catalyzes the conversion of
a) 2 Acetyl CoA to Acetoacetyl CoA b) Acetyl Co A to Malonyl CoA
c) Fatty acid to Fatty Acyl CoA d) Succinyl CoA to succinate
- Thiokinase enzyme catalyzes the conversion of
a) 2 Acetyl CoA to Acetoacetyl b) Fatty acid to Fatty Acyl CoA
c) Acetyl CoA to Malonyl CoA d) Succinyl CoA to succinate
- High amount of inactivates acetyl CoA carboxylase enzyme.
a) Long chain fatty acids b) Malonyl CoA c) Citrate d) Acetyl CoA
- is the source of carbon atoms for cholesterol synthesis.
a) Acetyl CoA b) Glucose c) Malonyl CoA d) Succinyl CoA
- All of the following is needed for synthesis of fatty acids **EXCEPT**
a) NADPH b) Acetyl CoA c) CO₂ d) Folic acid
- is required to release the newly synthesized fatty acid from fatty acid synthase complex.
a) Thiolase b) Thiophorase c) Thioesterase d) Hydratase
- is required for utilization of ketone bodies in the tissues.
a) Thiolase b) Thiophorase c) Thioesterase d) Hydratase
- is the key enzyme for fatty acid synthesis.
a) ATP citrate lyase b) Acetyl transacylase c) Acetyl CoA Carboxylase d) Thiolase
- The key enzyme for ketone bodies synthesis is.....
a) HMG CoA reductase b) Thiolase c) Thiophorase d) HMG CoA synthase
- The rate limiting enzyme for cholesterol synthesis is.....
a) HMG CoA reductase b) Thiolase c) Thiophorase d) HMG CoA synthase
- is an intermediate of pathway of cholesterol synthesis .
a) Ketone body b) Squalene c) Acetyl CoA d) 7- dehydro cholesterol
- Cholesterol is essential for synthesis of all of the followings **EXCEPT**.....
a) Bile salts b) Steroid hormone c) vitaminD3 d) Calcitonin.
- is the source of carbon atoms for ketone bodies synthesis.
a) Acetyl CoA b) Acetoacetyl CoA c) Propionyl CoA d) Succinyl CoA
- Chylomicrons transports
a) Lipids from liver b) lipids from intestine c) Glucose d) Amino acid
- is an inhibitor for HMG-CoA reductase.
a) Citrate b) Thyroid hormone c) Insulin d) Cholesterol
- Low density lipoprotein (LDL) composed mainly from.....
a) TG b) cholesterol c) Apo lipoprotein d) Ketone bodies
- Apoproteins is the activator of lipoprotein lipase.
a) AI b) B48 c) CII d) E
- transports Triacyl glycerol from the liver
a) LDL b) VLDL c) Chylomicrons d) HDL

60- All the following factors stimulate gastric emptying Except			
a- Gastric distention	b- Duodenal distention	c- Softer food	d- Gastrin hormone
61- The process of food regurgitation, remastication, reinsalivation, and reswallowing is			
a- Esophageal groove reflex	b- Eructation	c- Microbial fermentation	d- Rumination
62- The enzymatic part of pancreatic juice secretion stimulated by			
a- Cholecystokinin hormone	b- Secretin hormone	c- Sympathetic stimulation	d- None of them
63- The segmentation motility mainly occurs in intestine and responsible for			
a- Mixing food	b- Cutting food	c- Help absorption	d- All of them
64- All the following are of bile functions Except			
a- Help in fat digestion & absorption		b- Help absorption of Iron & calcium	
c- Help absorption of fat-soluble vitamins		d- Prevent protein putrefaction	
65- The general function of large intestine includes			
a- Finish the job of digestion & absorption		b- Secrete enzymes as maltase, sucrase	
c- Mucous secretion from Brunner's gland		d- Immunoglobulins adhere to its surface	

Q III) Discuss the following:

(12 marks)

- | | |
|--|-------|
| 1- Sperm capacitation. | (2 M) |
| 2- Hormonal changes during pregnancy. | (2 M) |
| 3- Mechanism of parturition (by diagram only). | (2 M) |
| 4- Microbial digestion of cellulose, starch, and protein
in ruminant animals (by diagram only). | (2 M) |
| 5- Factors affecting glomerular filtration rate. | (2 M) |
| 6- Functions of pancreatic juice in digestion. | (2 M) |

With our best wishes

40- Erythropoietin hormone is a glycoprotein hormone and secreted by			
a- Bone marrow	b- Juxtaglomerular apparatus	c- Renal tubules	d- Glomerulus
41- The renal blood flow to the renal vascular resistance			
a- Directly proportional	b- Inversely proportional	c- Not proportional	d- None of them
42- All the following increase the urine volume Except			
a- Decreased solutes reabsorption	b- Diuretics injection	c- Sympathetic stimulation	d- ADH deficiency
43- The respiratory alkalosis may be due to			
a- Gastric vomition	b- High altitude	c- Cushing disease	d- Excessive intake of Na bicarbonate
44- The metabolic acidosis caused by all the following Except			
a- Renal failure	b- Addison's disease	c- Starvation	d- Respiratory disorders as pneumonia
45- All the following hormones acting on Kidney Except			
a- 1,25 dihydroxycholecalciferol	b- Aldosterone	c- Atrial natriuretic peptide	d- Antidiuretic hormone
46- The enteric nervous system that supply GIT consists of			
a- Myenteric plexus	b- Meissner's plexus	c- Both of them	d- None of them
47- Colonoileal reflex initiated from colon and ileal content into colon			
a- Inhibit emptying	b- Stimulate emptying	c- Inhibit regurgitation	d- Stimulate regurgitation
48- All the following factors stimulate gastrin hormone secretion Except			
a- Gastric distension	b- Rise of content pH	c- Vagal stimulation	d- Lower of content
49- Secretin hormone stimulate all the following Except			
a- Stimulate gastric secretion & motility		b- Inhibit gastric secretion & motility	
c- Stimulate pancreatic secretion		d- Stimulate secretion of bicarbonate in bile	
50- Enterogastrone include all the following hormone Except			
a- VIP	b- GIP	c- Gastrin	d- Somatostatin
51- The function of saliva includes			
a- Moist buccal mucosa	b- Facilitate swallowing	c- Starch digestion	d- All of them
52- The cephalic phase of salivary secretion stimulated by			
a- Conditioned reflex	b- Unconditioned reflex	c- Esophageal reflex	d- Gastro-salivary reflex
53- During pharyngeal stage of salivary secretion lead to			
a- Lower esophageal sphincter relaxes		b- The breath stops momentarily	
c- Nasopharynx remain opened		d- Larynx move downward & backward	
54- The gastric mucosal barrier consists of the following Except			
a- A compact epithelial cell	b- A special mucous covering	c- Bile duct cells	d- Bicarbonate
55- Parasympathetic stimulation of stomach leads to			
a- Stomach wall contraction		b- Gastric secretion rich in mucous	
c- Gastric sphincters contraction		d- Vasoconstriction of gastric blood vessels	
56- The gastric secretion inhibited by			
a- Food ingestion	b- Emotions as anxiety	c- Duodenal distention	d- Hypoglycemia
57- The gastric secretion composed of all the following Except			
a- Pepsinogen	b- Trypsinogen	c- HCl	d- Mucous
58- The most important function of HCl includes			
a- Activate pepsinogen	b- Kills microbes	c- Stimulate bile flow	d- All of them
59- The optimum pH of pepsin activity in adult animals is			
a- 5.3	b- 2.1	c- 3.5	d- 6.5

- 21- Spermatogenesis stimulated by all the following Except:
a- Darkness b- Testosterone c- GnRh d- Lightening
- 22- Concerning the blood testicular barrier, all the following are correct Except:
a- Composed of Sertoli cells & Myoid cells. b- Prevent passage of sperms into circulation.
c- Stimulate spermatogenesis. d- Prevent passage of large molecules into seminiferous tubules.
- 23- The sperms stored in epididymis are
a- Capacitated b- Decapacitated c- Dehydrated d- Both b & c
- 24- Choleric agents are substances that increase bile formation in liver as
a- Bile salts b- Cholecystokinin hormone c- Vagal stimulation d- MgSO₄
- 25- All the following hormones produced by the ovaries except
a- Estrogens b- Inhibin c- FSH d- Relaxin
- 26- Is the site of fertilization in the female reproductive tract.
a- Ovaries b- Fallopian tubes c- Uterine horns d- Cervix
- 27- All the following are of the functions of vagina except
a- Site of implantation b- Site of semen deposition c- Site of copulation d- Part of the birth canal
- 28- The functions of progesterone include
a- Stimulate uterine contraction b- Stimulate growth of the mammary gland duct system
c- Enhance cervix closure d- Enhance vaginal mucous discharge
- 29- The females of the following animals are induced ovulatory animals except
a- Camel b- Cat c- Rabbits d- Sheep
- 30- Luteolysis occur at end of luteal phase under the effect of Hormone in cow.
a- Estrogens b- Prostaglandins F₂α c- Progesterone d- Embryo protein
- 31- The protect the fertilized ova from polyspermy.
a- Acrosomal reaction b- Starling law c- Zona reaction d- Hamburger phenomena
- 32- The type of estrus cycle in bitches is
a- Seasonal monoestrus b- Non-seasonal polyestrous c- Non-seasonal diestrus d- Seasonal diestrus
- 33- Inhibin hormone has a negative feedback mechanism on
a- FSH only b- LH only c- Both FSH & GnRh d- Both LH & GnRh
- 34- All the following events occur during estrus phase except
a- Female sexually receptive b- High Estrogen level c- Corpus luteum develop d- LH & FSH surge occur
- 35- The ovarian activity of sheep induced by
a- High environmental temperature b- Long photoperiod c- Starvation d- Injection of melatonin
- 36- The difference between secretion and excretion include
a- Excretory product is waste b- Secretory product is waste
c- Liver is an excretory organ d- Kidney is a secretory organ
- 37- The glomerular capillaries bed is Bed, that facilitate plasma filtration.
a- Narrow b- Wide c- High-pressure d- Low-pressure
- 38- The general function of kidney includes all the following except
a- Eliminate wastes b- Regulate erythropoiesis c- Essential for homeostasis d- Secretion of melatonin
- 39- The renin hormone secretion stimulated by
a- Renal ischemia b- Increased afferent arteriole pressure
c- Increased Na & Cl reabsorption at macula densa d- Increased angiotensin II & vasopressin



Department of Physiology
Course title: Special physiology
Course code: 222 – 2nd year 2nd term.
Date: 29 May 2019.
Time allowed: 2 hrs.



All Questions should be answered.

Q I) Identify the true (A) or false (B) sentences : (3 Marks)

1	The glomerular capillaries are the only capillaries in the body that drain into arterioles.	()
2	Kidney can excrete the excess amount of essential substances as urea, creatinine.	()
3	Renin hormone secreted by juxtaglomerular apparatus and can convert angiotensin I into angiotensin II.	()
4	GFR increased when the plasma colloidal osmotic pressure decreased.	()
5	Micturition reflex in infants is a voluntary reflex controlled by spinal reflexes.	()
6	Parasympathetic stimulation increases secretory and motor activity of GIT.	()
7	Cholecystokinin pancreozymin hormone increases gastric secretion and motility.	()
8	Buccal stage of swallowing is an involuntary stage that occurs after food mastication, insalivation, and formation of food bolus.	()
9	In ruminant, the gastric secretion from abomasum occurs only during food digestion.	()
10	Enterogastric reflex initiated by duodenal distension and inhibit gastric secretion.	()
11	Rennin enzyme can digest milk casein into peptides in young ruminant.	()
12	Hypoglycemia is the main cause of hunger contraction through vagal stimulation.	()
13	Vomiting center excitation lead to stimulation of abdominal muscles and diaphragm.	()
14	The 1ry wave (A wave) of ruminal movement is associated with eructation.	()
15	Pepsinogen replaces rennin in abomasal secretion during preweaning, postweaning phase.	()

Q II) Choose the correct answer: (10 Marks)

16- The primary sex organ of male genital system is the.....	a- Epididymis	b- Testicles	c- Prostate gland	d- Vas deferens
17- During Spermatogenesis the spermatogonia (A) mitotically divided into.....	a- Spermatogonia (A)	b- Spermatogonia (B)	c- None of them	d- Both of them
18- The spermatid produced in testicles is	a- Mature	b- Motile	c- Mature & Motile	d- Mature & Immature
19- Sertoli cells are nourishing cells. They also secrete	a- Gonadotropin	b- androgen binding protein	c- Testosterone	d- Relaxin
20- All the following share in testicular thermoregulation Except	a- Scrotum	b- Cremaster muscle	c- Pampiniform plexus	d- Tunica albuginea

5- A flock of laying ducks shows decreased eggs fertility percentage, some drakes show incomplete successful mating, this may be due to.....

- a. drake fighting b. duck damage c. broodiness d. penile pecking

6- Coprophagy in rabbit.....

- a. eating soft faeces b. eating soft faeces and hard droppings
c. rich in protein and vitamins d. abnormal behavior e. a and c.

7- Behaviors of broilers during heat stress includes.....

- a. increase feeding b. decrease feeding c. increase crouching
d. increase drinking e. a and d f. b, c and d

8- Each pullet required of perch

- a. 15 cm b. 25 cm c. 20 cm d. 35 cm

9- Marking behaviour of cat.....

- a. serves a social olfactory function
b. space cats out temporally so as to avoid sudden encounters
c. cat marks objects in the environment by scent glands and urine
d. a, b and c e. a and c

10- The ano-genetal distance of mouse is greater in.....

- a- male than female b- female than male c- breeding period d. gestation period

Best wishes

Menofia University

Faculty of Veterinary Medicine

Husbandry and Animal Wealth Development

**Animal and Poultry behavior and Management
(Second-term Examination)**

2nd Academic Year

16/6/2019

Please answer the following:

1- Write an essay:

8 Marks

- a- Precautions before breeding season of ewes
- b- Management of kid after parturition
- c- Copulatory tie and copulatory cry
- d- Foraging and dust-bathing behaviors

2- What do you know about:

6 Marks

- a- bull camel in rutting season
- b- sexual behavior of chicken
- c- flock of laying hen with cannibalism
- d- Breeding program of rats.

3- Summarize the followings:

6 Marks

- a- Abnormal behavior of queen.
- b- Body temperature and dehydration of camel as adaptation tools to desert life.
- c- Development of eliminative behavior of puppies

4- Choose the correct answer:

5 Marks

1- Gestation period in queen is.....

- a. 65 - 66 days
- b. 96- 100 days
- c. 60 - 63 days
- d. 50 - 53 days

2-dog stands with ears and tail hanging down.

- a. aggressive
- b. calm
- c. frightened
- d. alert

3-means that cats frequently move their kitten to new nests before weaning.

- a. communal nest
- b. marking behavior
- c. retrieval behavior
- d. a and c

4- Adult heavy rabbit should be handled from.....

- a. ears
- b. legs
- c. across the loins
- d. one hand catch the scruff of the neck and other hand support the weight of the animal.

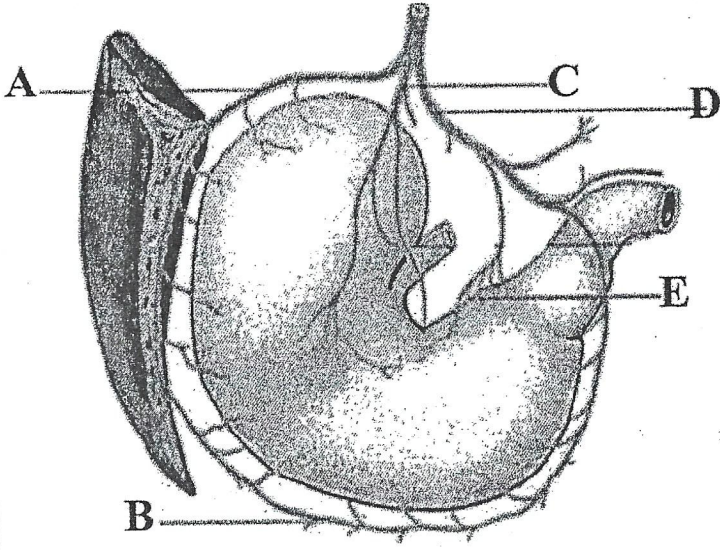


Menoufia University
Faculty of Veterinary Medicine
Applied and Comparative Anatomy Final Exam
Second Year Second Semester 2018/2019



Date: 26.5.2019

time allowed: 2 Hours

56- Right gastric artery	
57- Left gastric artery	
58- Hepatic artery	
59- Left gastroepiploic artery	
60- Splenic artery	

Second part subjective questions (10 points) الاجابة فى كراسة الاجابة

A- Briefly describe with illustrations each of followings

- 1- Origin and branches of the left subclavian artery of horse
- 2- Lymphocenters of the thoracic cavity
- 3- Brain ventricles
- 4- Type, origin and branching of facial nerve

Good luck

Prof. Dr. Ahmed Saber El Fayoumy

Prof. Dr. Reda Rashid



Menoufia University
Faculty of Veterinary Medicine
Applied and Comparative Anatomy Final Exam
Second Year Second Semester 2018/2019



Date: 26.5.2019

time allowed: 2 Hours

- 37- The right ventricular border is much shorter and is nearly vertical.
- 38- The auricle of right atrium appears on the left side cranial to the origin of the pulmonary trunk.
- 39- The intervenous tubercle is a ridge in left atrium just cranial to the opening of the caudal vena cava
- 40- The left atrioventricular orifice is almost circular and is guarded by the bicuspid (mitral) valve
- 41- The presence of 2 os cords developed in the aortic fibrous ring is a feature of horse heart
- 42- The left coronary artery divides into interventricular subsinuosal artery and left circumflex artery:
- 43- The para sympathetic is distributed all over the body
- 44- The Commissural fibers connects one cerebral hemisphere to the other hemisphere
- 45- The tracheal trunk is the efferent vessels of the lateral retropharyngeal lymph node
- 46- The diencephalon constitutes the rostral part of the rhombencephalon
- 47- The dura matter of spinal cord is divided of two membranes
- 48- The cerebellum is roughly globular mass and is located above the fourth ventricle
- 49- The spinal cord extends caudally after the medulla oblongata till the end of the vertebral canal
- 50- Tentorium cerebelli, is transverse fold of pia matter presents between cerebrum and cerebellum

Look to the diagram and choose the legends (from A-E) for each present structure

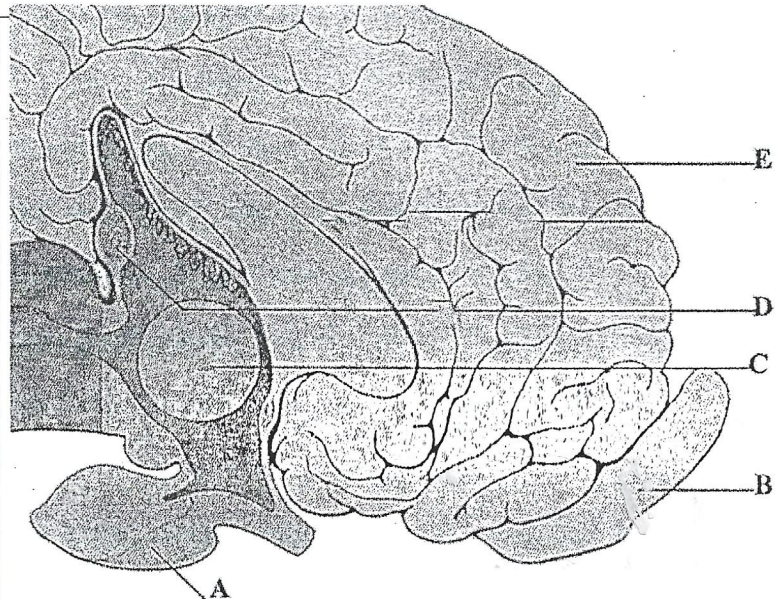
51- Cerebral cortex

52- Pituitary gland

53- Olfactory bulb

54- Interthalamic adhesion

55- Pineal gland



Look to the diagram and choose the legends (from A-E) for each present structure



Menoufia University
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Date: 26.5.2019

time allowed: 2 Hours

17- Pons and cerebellum forms the			
A. Rhombencephalon	B. Myelencephalon	C. Brain stem	D. None of them
18- Cranial nerves carry parasympathetic fibers			
A. 1, 2, and 8.	B. 3, 7, 5 and 10	C. 5, 7, 9, 10	D. 3, 7, 9 and 10
19- Telencephalon includes			
A. Cerebrum	B. Cerebellum	C. Thalamus	D. Pons
20- Inside each cerebral hemisphere there is ventricle			
A. Lateral	B. Third	C. Fourth	D. None of them
21- Rhinencephalon is a part of the.....			
A. Pons	B. Cerebrum	C. Cerebellum	D. Epithalamus
22- Hypothalamus is a part of			
A. Cerebral cortex	B. Telencephalon	C. Diencephalon	D. Mesencephalon
23- A collection of nerve cells within the PNS forms.....			
A. Tract.	B. Ganglia	C. Trunk	D. Nucleus
24- The lips take its nerve supply from the cranial nerve			
A. 3 rd	B. 4 th	C. 5 th	D. 6 th
25- Sympathetic nerve cells localized within.....horn of thoracic part of spinal cord			
A. Lateral	B. Dorsal	C. Ventral	D. None of them
26- Autonomic nervous system is described as fibers			
A. SSA	B. GVE	C. SSE	D. SVE
27- Denticulate ligament help in fixation of spinal cord and is formed of condensed			
A. Pia matter	B. Dura matter	C. Arachnoid	D. None of them
28- The numbers of cervical spinal nerve are.....			
A. 6	B. 7	C. 8	D. 9
29- The sensory cranial nerves include..... Cranial nerve			
A. 6 th	B. 7 th	C. 8 th	D. All of them
30- The motor nerve of tongue is.....cranial nerve			
A. 9 th	B. 10 th	C. 11 th	D. 12 th
Identify the true (A) or false (B) sentences			
31- The maxilla forms the cranial part of upper jaw and carry upper incisor teeth			
32- The orbital part of lacrimal bone has fossa that leads into the opening of nasolacrimal duct			
33- The Stylomastoid foramen the exit of facial canal of facial nerve			
34- The Cristiform plate of frontal bone is the partition between nasal and cranial cavities			
35- The gastric, mesenteric, splenic and pancreatic veins join forming the caudal vena cava			
36- The apex of heart laid centrally 1 cm dorsal to the first sternebra.			



Menoufia University
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Date: 26.5.2019

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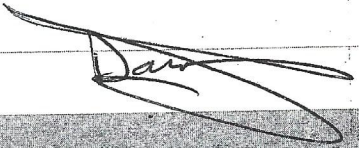

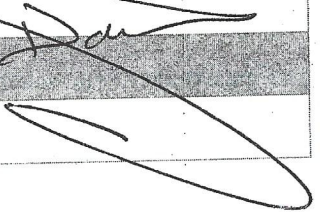
Please answer the all of following questions

First part the objective questions (60 questions/15 points) الاجابة في نموذج الاجابة الالكتروني

Choose the correct answer

1- Thebone is formed of squamous, petrosal and tympanic parts			
A. Temporal	B. Frontal	C. Parietal	D. Occipital
2- The foramen magnum perforated centrally the.....bone			
A. Temporal	B. Frontal	C. Parietal	D. Occipital
3- The temporal joint articulate the mandible andbone of skull			
A. Temporal	B. Frontal	C. Parietal	D. Occipital
4- The angular process is a feature of the mandible of.....			
A. Horse	B. Ox	C. Dog	D. Camel
5- The sternopericardiac ligament is absent in.....			
A. Horse	B. Dog	C. Ox	D. Camel
6- The cranial border of heart is formed mainly by.....			
A. Right ventricle	B. Left ventricle	C. Right atrium	D. Left atrium
7- The blood passing within two capillary sets formingcirculation			
A. Greater Systemic	B. Lesser pulmonary	C. Portal	D. None of them
8- The intermediate groove is a feature of the heart of			
A. Ox	B. Pig	C. Camel	D. All of them
9- The sinus venarum cavarum is a part of.....			
A. Right ventricle	B. Left ventricle	C. Right atrium	D. Left atrium
10- The supraventricular crest is a part of.....			
A. Right ventricle	B. Left ventricle	C. Right atrium	D. Left atrium
11- The four fibrous rings of dense connective tissue surrounding the valves of heart forms.....			
A. Cardiac skeleton	B. Pectinat muscles	C. Pericardium	D. Trabeculae carnae
12- In mammalian embryo the number of chief openings of right atrium is.....			
A. 4	B. 5	C. 6	D. 7
13- In adult the aortic arch is connected to pulmonary trunk by.....			
A. Ligamentum arteriosum	B. Ductus arteriosus	C. Sinus venosus	D. Pericardium
14- The 10 th dorsal intercostal artery originated from			
A. Thoracic aorta	B. Abdominal aorta	C. Supreme intercoastal	D. Internal thoracic
15- The master lymph node of head region is.....lymph node			
A. Mandibular	B. parotid	C. lateral retropharyngeal	D. Medial retropharyngeal
16- The common carotid artery is terminated into.....			
A. External carotid	B. Internal carotid	C. Occipital	D. All of them

Best wishes

Professor Responsible:	Dr. Ahmed Dawod	
Course Coordinator:	Dr. Ahmed Dawod	
Head of Department:	Prof. Dr. Ahmed El-Fyoumi	
Exam Committee	Dr. Ahmed Dawod; Dr. Eman Salam	

54. The physical appearance of an animal is known as:

- a. Genotype
- b. Pedigree
- c. Performance
- d. Phenotype

55. Prepuberal heifers frequently display an----- estrus and this phenomenon known as nonpuberal estrus.

- a. Ovulatory
- b. Anovulatory
- c. Transitory
- d. Identified

56. The onset of puberty in Holstein heifers occurs between 5 and 18 months of age with an average of ----- months.

- a. 8
- b. 9
- c. 6
- d. 12

57. The maturity age usually follow the puberty age by ----- months in dairy animals.

- a. 6-8
- b. 4-5
- c. 8-9
- d. 6-9

58. Days open is influenced by

- a. voluntary waiting period
- b. heat detection rate
- c. conception rate
- d. all of the above

59. The estimation of the present days open done from the following formula

- a. VWP+ BT
- b. VWP+ DFH
- c. CI- PT
- d. VWP+ SPC

60. The ideal target for the high producer herd average is ----- inseminations/ calf born.

- a. 3
- b. 2
- c. 1.7
- d. 1.5

61. The level of uterine infection in the dairy herd must be less than -----%

- a. 12
- b. 10
- c. 15
- d. 9

62. Induction of milk synthesis is known as-----

- a. Mammogenesis
- b. Lactogenesis
- c. Galactogenesis
- d. Galactopoiesis

63. Once the intra-mammary pressure reaches a certain level nearly 70 mm Hg in the cow the milk secretion will rate decline, this pressure level attained in the udder of the dairy cows at --hours after the last milking.

- a. 10
- b. 12
- c. 14
- d. 15

64. Milk production increases with lactation number and is maximized in -----lactation.

- a. 4-5
- b. 2-3
- c. 3-4
- d. 2-4

65. During hoof trimming program for the dairy herd the fore limb hoof adjusted at -----

- a. 55°
- b. 45°
- c. 40°
- d. 48°

66. The level of retained placenta as a metabolic disorder should be less than --%

- a. 10
- b. 8
- c. 5
- d. 4

67. The increase of the metabolic disorder in the dairy herds during transition period is due to-----

- a. Mineral disorders
- b. Hormonal changes
- c. Nutritional demands
- d. Pregnancy

68. During the transition phase the dairy cows suffering from high level of circulating corticoids which caused-----

- a. Hypocalcemia
- b. Fatty liver
- c. Ketosis
- d. Decreasing WBCS number and engulfing ability

69. A protein of 7 K Dalton which can suppress autocrine secretion of the mammary gland

- a. HDL
- b. LDL
- c. FIL
- d. BT

70. Initial milk yield is the average daily milk yield during the first ----- weeks of lactation

- a. 6-8
- b. 3-4
- c. 5-6
- d. 7-8

38. I am breeding a great granddaughter to great grandfather, what am I doing?
- grading up
 - crossbreeding
 - progeny testing
 - linebreeding
39. Which system involves breeding a crossbred animal to a one of it's purebred halves to increase the composite of that breed in the offspring?
- grading up
 - crossbreeding
 - back crossing
 - two bred criss crossing
40. Which system consists of breeding purebred sires to commercial females?
- inbreeding
 - linebreeding
 - cross breeding
 - grading up
41. What method of breeding is used to develop specialized "lines" of animals?
- inbreeding
 - crossbreeding
 - pure breeding
 - multi-breeding
42. Selection of which parent is more important when a producer is developing a breeding program?
- sire selection
 - dam selection
 - selection of both parents is equally important
 - selection of the parents is not important
43. If you chose grading up as the method of breeding for your operation, what generation would you see the most evidence of improvement?
- second generation
 - third generation
 - fourth generation
 - fifth generation
44. What are the two types of breeding systems are generally used by individuals in the purebred industry?
- inbreeding and linebreeding
 - crossbreeding and linebreeding
 - crossbreeding and linebreeding
 - half breeding and full breeding
45. In a two breed rotational crossbreeding system, which generation and sire with have 75 percent Breed A and 25 percent Breed B?
- First generation; Breed B
 - Second generation; Breed A
 - Third generation; Breed B
 - Fourth generation; Breed A
46. Like covariance, used to describe the relationship between 2 variables in the population
Range of values is -1 to 1. It is unitless
- Selection intensity
 - Selection risk
 - Confidence range
 - Correlation
47. The ideal target aim of pregnancy rate in dairy herd is..... %.
- 25
 - 18
 - 17
 - 16
48. The dairy cows reached to the peak of their lactation curve within the first weeks of lactation.
- 20
 - 15
 - 12
 - 8
49. The premisable level of the incidence of retained placenta as a reproductive problem is less than..... in the dairy herds.
- 5%
 - 7%
 - 10%
 - 8%
50. The retained hetrosis for the three breed rotational cross program reached to.....
- 88%
 - 83%
 - 86%
 - 89%
51. Individual selection is one of the selection strategy which could be use in case of heritable traits.
- High
 - Low
 - Medium
 - Complex
52. The peroid from parturation till conception
- VWP+BT
 - CI
 - BT
 - CLP
53. The degree to which the crossbred offspring outperforms its parent purebreds is known as:
- Hybrid vigor
 - High performance
 - Rotio condition
 - Phenotype