

# აგროარული მეცნიერებების და ბიოსისტემების ინჟინერინგის ფაკულტეტი

მაგისტრატურაში მისაღები სასპეციალიზაციო საგამოცდო ტესტი

Viticulture and oenology  
Master program

## Thematic - Wine

1. According to the to the Resolution # 524 of the Technical Regulation 2018, the C13 / C12 ratio of carbon in all categories of wine should be:
  - a) =no less 30 and no more 24;
  - b) no less 24 and no more 20;
  - c) no less 20 and no more 15;
  - d) no less 35 and no more 30;
  
2. Red and some white wine is produced through malolactic fermentation. During this process:
  - a) Malonic acid transferred sugar into the alcohol;
  - b) =The acute acids transferred in to the soft acids;
  - c) Wine fermented on solid parts of the grape takes color from the skin of the grape;
  - d) Increases the amount of volatile substances;
  
3. The duration of alcoholic fermentation:
  - a) =2-4 weeks;
  - b) 4-6 weeks;
  - c) 1-2 weeks;
  - d) 1-5 weeks;

4. What is the 10-step process of breaking down glucose by yeast?
- a) =saccharolysis;
  - b) Diffusion of glucose;
  - c) Glycolysis;
5. What are phenols?
- a)=Substances consisting of one or more groups of aromatic nuclei and related hydroxyl;
  - b) Substances consisting of one or more groups of benzene nuclei and associated hydroxyl;
  - c) Substances consisting of aromatic and benzene nuclei;
  - d) Substances consisting of benzene nuclei;
6. The aim of the Pigeage?
- a) Production of driest wine;
  - b) =Extraction of the color and tannin;
  - c) Improvement of acidity
7. The temperature of red wine fermentation is:
- a) 15C;
  - b) =From 20C- to 32C;
  - c) From 10C- to 18 C
8. Tannins occur into wine from:
- a) =grape skin;
  - b) From the pulp of the berry;
  - c) During alcoholic fermentation;
  - d) Aging process;
9. Compared to red wine, the alcoholic fermentation of white wines is mainly goes:
- a) On both: high and low temperature;

- b) On high temperature;
- c) =On low temperature;
- d) On the middle temperature;

10. What is the young wine?

- a) Wine that fermented fully;
- b) Wine that fermented fully or max.  $\frac{3}{4}$ ;
- c) Wine, that does not fermented yet;
- d) =Wine which has been fermented fully or at least  $\frac{3}{4}$  and is not separated from the yeast;

11. Which filling operation gives the best result:

- a) Alluvial filtration;
- b) Separator;
- c) Microfiltration;
- d) =All the above mentioned

12. The declaration "Wine contains sulfite" is obligatory on the label, when:

- A) Exceeds 45 mg / l;
- B) =Exceeds 30 mg / l;
- C) Exceeds 45 mg / l;
- D) Exceeds 50 mg / l;

13. How many forms of SO<sub>2</sub> are there in wine?

- A) 2
- B) 4
- C) =3
- D) 5

14. Rapid decomposition of yeast causes:

- A) Better management of autolysis;
- B) Better management of the sedimentation process;
- C) =H<sub>2</sub>S generation

D) Formation of foam on the surface;

15. What is wine?

a)=An alcoholic beverage of grape origin, which is obtained only as a result of full or partial alcoholic fermentation of grapes, grape juice;

B) A product obtained by the complete or partial alcoholic fermentation of a bush or lee;

C) A product obtained by mixing ethyl alcohol, organic dyes and organic acids;

D) A product which has been distilled by the distillation of any fruit juice obtained;

16. According to the wine and vine Law, in order to increase acidity it is permit to add:

A) Tartaric acid, gluconic acid, lactic acid and citric acid;

B) =Tartaric acid, malic acid, lactic acid and citric acid;

C) Glycolic acid, lactic acid and citric acid;

D) Tartaric acid, glycolic acid, balsamic acid and citric acid;

17. During the reduction of the acidity by a simple chemical method, the following are distinguished:

A) =Ca - tartrate;

B) Ca - Tartratimalate;

C) K - Tartrate;

D) K -hydrogenartartrate

18. According to the grape variety maturity how many periods are vine varieties divided?

A) 3

B) 9

C) =5

D) 7

19. To prevent boiling in the bottle it is necessary

- A) Lowering the temperature;
- B) High acidity;
- C) =Microbiological stability
- D) There are colloidal compounds that can combine a protective function.

20. The separation of wine stone crystals starts:

- A) After fermentation;
- B) In the aging process;
- C) Before casting;
- D) =in the grape juice stage and lasts all the time;

21. Which of the wine-producing countries belongs to the old world of wine:

- A) China, South Africa and America;
- B) =Spain, France and Italy;
- C) America, France and Italy
- D) All of the above

22. Decalitre is:

- A) =The unit of measurement established for the registration of products of grape origin, which is equivalent to 10 liters;
- B) The total content of non-volatile substances in wine;
- C) Actual volumetric alcohol content of wine packaged in consumer containers;
- D) The unit of measure established for the registration of aged wine products;

23. The actual alcohol c by volume of the wine for the pitcher wine must be:

- A) More than 12.0 g / l and not more than 17.0 g / l;
- B) More than 45.0 g / l;
- C) =not less than 11%;
- D) Not more than 50.0 g / l.

24. According to the regulation document, the concentration of volatile acids in rosé wine should not exceed the calculation of acetic acid:

- A) =1 g / l;
- B) 7-8 g / l;
- C) 27-28 g / l;
- D) 0.1-0.3 g / l;

25. The reason for the development of nectarine tone in wine (geranium; 2-ethoxyhexa-3,5-din) is:

- A) =Misuse of potassium sorbate
- B) Wine filtration
- C) Stabilization of wine
- D) Making wine

26. Which technological operation is not used in the production of sparkling wine:

- A) Add yeast mother
- B) =Distillation of wine material for making sparkling wine (distillation)
- C) Circulation
- D) Ensemble

27. Crystalline compounds formed as a result of aging or fermentation are called:

- A) Ethyl acetate;
- B) Lee;;
- C) Brettanomyces;
- D) =Tartrate;

28. What is the name of the ripening tool used in the vineyard?

- A) Reflectometer
- B) Maturity meter
- C) Sweetness meter
- D) =Refractometer;

29. Which of the following is not allowed in Bordeaux wines?

- A) Cabernet Franc;
- B) Malbec;
- C) =Tanat;
- D) Cabernet Sauvignon;

30. The purpose of the pinch down is:

- A) =Extraction of dyes and tannins;
- B) Improving acidity;
- C) Increase the alcohol content of wine;
- D) Making drier wine

31. "Reserve" marking on the label means:

- A) 6-month aging in oak;
- B) =12 months of aging in oak;
- C) 18-month aging in oak;
- D) 24-month aging in oak;

32. What is a biodynamic wine?

- A) Wine produced from organic vineyards;
- B) =Wine production that relies on the theory of Rudolf Steiner of 1924;
- C) Wine production that relies on spiritual-ethical-ecological achievements;
- D) Wine produced from sustainable vineyards.

33. Sort white wine technology processes in the following order:

Maturation; 2. pressing 3. Fermentation; 4 Pressing

- A) 4,2,3,1;
- B) 4.2,1,3;
- C) 2.4.1.3;
- D) =2,4,3,1

34. Fermentation of red wine is going on:

- a) =20-32 C;
- b) 15-27 C;
- c) 12-20 C;
- d) 17-29 C

35. The purpose of chaptalization is:

- A) Increase in tannin;
- B) Increase in alcohol;
- C) =Increase in sweetness;
- D) Increase in acidity;

36. Wine aging on the lee obtain:

- A) Aromas and flavors of red fruit;
- B) Tropical flavors;
- C) Oak aromas;
- D) =Creamy texture and condensed ends

37. In champagne department, pink champagne is more often made by blending than by maceration:

- A)=Correct
- B) Wrong

38. In the production of sparkling wine Expedition liqueur is added::

- A) For intensification of yeast autolysis
- B) To prevent hydrogen sulfide tone
- C) For wine fermentation
- D) =In order to increase the sugar content in wine.

39. How many methods of vinification does have red wine:

- A) 5;
- B) 6;
- C) =7:



D) 8

40. What is a pigeage:

- A) Active fermentation process of red wine;
- b) Participation of skin, clematis and beech;
- c) =The process of disintegration of a thick layer of skin, clematis and beech;
- d) Maximum transition of tannins, flavors;

41. The last step in the wine bottling process is:

- A) Blend;
- B) =Stabilization of wine stone;
- C) Sticking;
- D) Stabilization of acids;

42. During cold maceration, wine is stored:

- A) On 4 C temperature for 10 days;
- B) =On the 8 C temperature for 3-5 days;
- C) On the 0C temperature for 3-5 days;
- d) On the 2C temperature for 3 days;

43. Terpenes are important:

- A) =in the process of producing wine aromas;
- B) In the process of alcoholic fermentation;
- C) On the animal activity of yeasts;
- D) To manage the wine aging process;

43. During the last 5 years, how many micro zones of appellation of origin have been added to the viticulture and winemaking zones of Georgia?

- A) 3;
- B) =6;
- C) 5;
- D) 8

44. During aging of brandy, the following is extracted from the oak into alcohol:

- A) =Lignin, cellulose, oak tannins
- B) Aldehydes and ketones
- C) Higher alcohols
- D) Gelatin;

45. According to the industry regulatory documentation, a high quality wine brand is produced:

- A) =In oak barrels, with a maturity of not less than 6 years
- B) By mixing brandy spirits and oak extract;
- C) By aging brandy into a stainless metal tank;
- D) By mixing alcohol, oak tannin, cholera and dye

46. Wine brand is:

- A) =Obtained by blending and further processing of aged brandy spirits  
A product with specific properties;
- B) Non-alcoholic beverage
- C) Product obtained by distillation of fruit juice
- D) Raw spirit

47. The material allowed to make the brand does not belong to you

- A) Brand alcohol
- b) Caramel
- c) =Rectified alcohol made from fruit

48. According to the legislation: The titratable acidity of brandy wine should not be:

- A) =Less than 5 g / l.
- B) less than 10 g / l
- C) less than 19 g / l
- D) less than 100 g / l

49) Fish glue is used:

- A) =For stabilization of aged white wines
- B) For the stabilization of young white wines
- C) For stabilization of aged red wines
- D) For the stabilization of young red wines

50) Potassium sorbate is added to naturally semi-sweet wine:

- A) Before cleaning the sweet
- B) before the wine stabilizes
- C) ferric acid during fermentation
- D) =Before bottling

## 2. Thematic - Viticulture

63) What does “Ampelography” study?

- A. Ampelography is a field of agriculture studding a vine care and cultivation;
- B. =Ampelography is the field of botany concerned with the identification and classification of grapevines, *Vitis* spp.
- C. Ampelography is a field of viticulture, which studies the biological properties of vines, systems of vineyard cultivation and management
- D. Ampelography is -a science of grapevine management

64) What is the name of the family to which the grapevine belongs?

- A. *Vitis*
- B. *Vitis vinifera sativa*
- C. =Vitaceae

- D. *Vitis vinifera*
- E. *Vitis sylvester*

65) What is a “*Viticulture Sub-zone*” in Georgia?

- A. A territory of Georgia, where agro-ecological conditions favorable for the plant;
- B. A part of the territory of Georgia where agro-ecological conditions are favorable for the cultivation of grapevine varieties;
- C. A part of the viticulture sub-zone which differs from other viticulture micro-zones by agro-ecological conditions;
- D. =A part of the viticulture zone distinct from other parts of the same zone in its agro-ecological conditions;

66) What does the growth and development of the vine depend on?

- A. On the soil;
- B. On the micro zone;
- C. Environmental conditions;
- D. =On the root system;

67)The planting period for a vineyard is in:

- A. Spring - summer
- B. Late autumn - warm Winter
- C. Summer - autumn
- D. =Spring - Autumn

68) What does Phylloxera is?

- A. Fungi
- B. =Pest
- C. Bacteria
- D. Nematode
- E. Virus
- F. Phytoplasma

G. No one answer is correct

69) Purpose of the nursery:

- A. =Plant material (grafted banchgrafts) development;
- B. Seedling cultivation;
- C. Produce a grafting process;
- D. Development of the root system of the vine;

70) How many apical meristem a vine has?

- A. 1
- B. =2
- C. 3

71)The main function of the tendril is:

- A. To produce buds for next-year development
- B. =To support grape plant on another structure
- C. To make transpiration

72) Cultivation of grapes is also known as

- A. Horticulture
- B. =Viticulture
- C. Sericulture
- D. Pisciculture

73) In which Viticulture zone does “Khvanchkara” wine is produced:

- A. Imereti;
- B. Kakheti
- C. =Racha-Lechkhumi
- D. Guria

74) In which period does a vine blooming take place in general?

- A. March – April

- B. April-May
- C. =May-June
- D. June-July

75) What does a term “Phenology” means?

- A. =The study of event or growth stages of a plant that repeat seasonally
- B. The study of process that take place during up taking of water from roots to leaves
- C. The study of process for breeding of new varieties
- D. No one answer is correct

76) Which are the varietal composition and their percentage used in making of the white dry wine “Manavi”?

- A. Imereti Rkatsiteli (50%) and Mtsvane Kakhuri (50%)
- B. =Kartli Rkatsiteli (15%) and Mtsvane Kakhuri (75%)
- C. Rkatsiteli (50%) and Kisi (50%)
- D. Rkatsiteli (50%), Kisi (25%) and Khikhvi (25%)

77) How to calculate the feeding area of a vine in a vineyard?

- A. Distance between rows;
- B. Distance between plants in row;
- C. =Distance between rows X Distance between plants in row
- D. No one answer is correct

78) What is a “*Viticulture Zone*”?

- A. =An extensive geographical territory of the country with favorable agro-ecological conditions for vine cultivation
- B. The part of the territory where the appellation of origin wine is produced;
- C. The part of the area where the amateur vineyard is cultivated;
- D. The part of the area where the vineyard is cultivated;

79) How many viticulture Microzones (so called PDO’s) are there in Georgia recently?

- A. 5
- B. 10
- C. 18
- D. =24

80) Based on the Law of Georgia on “Vine and Wine” (2017) there can be the following type of a vineyard:

- A. Special vineyard
- B. Commercial vineyard
- C. Amateur vineyard
- D. =All the above mentioned;

81) Which are the main chemical factors taken into account when harvesting the grapes?

- A. Phenols' structure and sugar content
- B. =Sugar and acidity
- C. Organic acids and water contents

82) What plant's part(s) may be used for asexual (vegetative) propagation?

- A. Canes
- B. Shoots
- C. Leaves
- D. Roots
- E. =All the choices are correct

82-1) The principal method of commercial multiplication for cultivated grapevine in modern days is by

- A. Seeds
- B. Cuttings
- C. Layering
- D. =Grafting

83) How many native (autochthonous) varieties do we have in Georgia?

- A. 320
- B. 400
- C. =525
- D. 750

84) Life cycle of grapevine is

- A. Annual
- B. Biennial
- C. =Perennial

85) The term "Direct Producer Hybrid" in viticulture means a new breeding plant obtained by crossing of:

- American species X American species
- =European species X American species
- Asian species X American species
- European species X European species

86) Chromosome number for sub-genus *Vitis* is equal to:

- $2n=36$
- = $2n=38$
- $2n=40$
- $2n=42$

86-1) Factors influencing the crop cultivation

- A. Temperature
- B. Rainfall
- C. Fertility of soil
- D. =All of those

86-2) What is meaning of a term by "integrated pest management"?

- A. using only chemicals to control pests
- B. not using any means other than biological to control pests



- C. =using a combination of chemicals, biological, and physical controls to manage pests
- D. using only organic methods of controlling pests
- E.

86-3) What is pollination?

- A. use of vegetative plant parts to produce another plant
- B. =transfer of pollen from the anther to the stigma
- C. union of male and female cells to form the embryonic cell
- D. none of the choices are correct

86-4) Minimum temperature for starting of bud break and root development is:

- 7 °C
- =10 °C
- 15 °C

86-5) The typical habit of grapevine is

- Tree
- =Woody liana
- Shrub

### 3. Thematic – business elements

87) Who is the customer-client?

- A. =One who changes demands, lifestyles, and consumer behaviors;
- B. Makes the product viable;
- C. Imposes supply-demand on the market;
- D. Who defines what a business is;

88) The aim of the wine marketing?

- A. Quality control of wine production;

- B. Create marketing plan;
- C. Creating a new brand
- D. =Plan the strategy for the market.

89) What does the wine market offer to consumers?

- A. product;
- B. Factors;
- C. Services;
- D. =All of the above.

90) How many key components does the wine market consist of?

- A. From viticulturists and winemakers;
- B. From winemakers to distributors;
- C. From consumers and distributors;
- D. =From all of the rings listed above;

91) What is wine as a market product?

- A. Product obtained from grapes;
- B. Imperfect product;
- C. Brand;
- D. =A product obtained from bottled grapes juice;

92) What is a wine brand?

- A. Product name;
- B. Image;
- C. Logo;
- D. =All of the above;

93) What is wine marketing?

- A. =A new concept of the world market;
- B. New brand;
- C. Wine market;
- D. New product research;

94) What types of wine markets are there?

- A. Mass market;
- B. Differential Product Market;
- C. Target market (niche);
- D. =All of the above;

95) How long does the wine company plan its strategy?

- A. 10 months;
- B. =Short-term and long-term;
- C. 12 months;
- D. 3 months;

96) What is included in the price of wine:

- A. The cost of raw materials only;
- B. Only transportation costs;
- C. Advertising costs; operating costs;
- D. =All together listed above;

97) Wine market research is conducted to obtain information:

- A. About products;
- B. explore competitors;
- C. General market analysis;
- D. =Define the target segment;

98) What is branding?

- A. design;
- B. =Marketing and management technology;
- C. Trademark;
- C. advertisement;

99) What is a wine company business plan?

- A. =Document - for planning and expenses of future activities;
- B. Document - with a marketing plan;
- C. Cost estimate document;
- D. Document - about a specific market;

100) The main aspects to be considered when exporting wine are:

- A. Harvest year;
- B. Chemical and organoleptic indicators;
- C. =The legislation of the importing country;
- D. Bottle capacity;

101) The main functions of management are:

- A. =Planning-organization-leadership-control;
- B. Organization-Leadership-Control-Sales;
- C. Planning-Organization-Leadership-Advertising;
- D. Organization-control

102) In case of introducing a new brand in a competitive market, the following should be considered:

- A. Market segment;
- B. Price; Packaging;
- C. Marketing program
- D. =All of the above

103. The main functions of marketing planning are:

- A. =Analysis, planning, implementation and control;
- B. Planning, implementation and control.
- C. Demand, supply, analysis, planning, sales and control.
- D. Sales and control.

104. How do brands differ from each other?

- A. By name and image;
- B. =By force and value
- C. by logo;
- D. By product;

105. What does a wine brand strategy involve?

- A. =Brand positioning,
- B. Selecting a brand name;
- C. Brand sponsorship and brand development;
- E. All of the above.

106. What is a market?

- A. Supply-demand;
- B. =The combination of existing and potential consumers of goods;
- C. Industrialization of production;
- D. Production and service relationship;

107 Who determines the demand?

- A. =Costomers;
- B. B. Manufacturer;
- C. C. Market;
- D. D. economic;

108. What does a wine advertising campaign include:

- A. Company presentation;
- B. Product quality;
- C. =Product tasting;
- D. Price category; D. Packaging,

109. When buying wine, the following are affected by the consumer:

- A. Brand;
- B. Variety;
- C. Packaging;
- D. Year of harvest;
- E. =All of the above

110 In the process of creating a wine brand, it is important:

- A) variety and location of the vineyard; B. Name; C. Logo
- D. =All of the above

111. Ways to sell wine are:

- A. Website;
- B. Telemarketing;
- C. Direct sales; D. social network
- E. =All of the above;

112. Which mark defines the international standards on contract in wine production management

- A. HACCP;
- B. =ISO9001;
- C. ISO1705;
- D. SIB 234

### **Thematic - Microbiology**

113. Which of the following is a prerequisite for the nutrient soil used to grow bacteria?

- A) =must not contain water b) must be able to create an optimal temperature
- C) must be saturated with oxygen d) must be saturated with nitrogen

114. Which phase is characterized by the maximum rate of multiplication and the geometric progression of the number of yeast populations?

- A) =logarithmic phase b) lag phase c) stationary phase d) quadrant phase

115. For which microorganisms is a small concentration of free oxygen sufficient for growth and development?

- A) Obligatory aerobes b) Optional anaerobes c) Obligatory anaerobes d) =Microaerophiles

116. Which plasmids control the development of antibiotic resistance in bacteria?

A) =R-plasmids b) F-plasmids c) Pathogenicity plasmids d) Col plasmids

117. Which of the following is the most complete viral genetic material? A) single-stranded DNA b) =double-stranded DNA c) single-stranded RNA d) double-stranded RNA

118. Which is not in the bacterial cytoplasm?

A) nucleotide b) ribosome c) plasmid d) =nucleus

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