

PROVA DI AMMISSIONE AL CORSO DI LAUREA TRIENNALE IN NURSING

Anno Accademico 2025/2026

Per ogni domanda, la risposta esatta è quella evidenziata

Reading skills and knowledge acquired during studies Test

1. Which of the following is not a book by Giovanni Verga?

- A) *The Oil Jar*
- B) *Mastro don Gesualdo*
- C) *History of a Blackcap*
- D) *The She-Wolf*
- E) *Little Novels of Sicily*

2. The methodical destruction of an ethnic or religious group, achieved through the elimination of individuals and the cancellation of values and cultural documents, is defined as:

- A) genocide
- B) persecution
- C) bullying
- D) suppression
- E) harass

3. Read the text and respond only on the basis of the information it contains explicitly or implicitly and not on what you already know about the topic.

Sometimes, during the evening, Cesare Pavese would come visit us; then he would just seat, pale, with his scarf around his neck, [...] throughout the whole evening he would not say a single word [...] However, conversation with him was never easy, not even when he seemed happy; but a meeting with him in which just a few words were exchanged could be far more stimulating than with anyone else. In his company we became more intelligent; we felt compelled to articulate whatever was best and most serious in us, and we got rid of commonplace notions, imprecise thoughts, incoherent ideas.

Natalia Ginzburg, *The Little Virtues*, Part 1, *Portrait of a Friend*, "Cesare Pavese, Friend and Colleague", 1958, 1962

What effect did Cesare Pavese have on his friends when he conversed with them?

- A) The effect was stimulation: he compelled his friends to avoid the commonplace
- B) The effect was amusement: he compelled everyone to make well-considered speeches
- C) The effect was a sense of awe, because he compelled everyone to speak coherently and thoughtfully
- D) The effect was a sense of isolation because he would not converse with anyone
- E) The effect was inhibition: when he conversed, which was very rarely, his friends struggled because they could not speak

4. Read the text and respond only on the basis of the information it contains explicitly or implicitly and not on what you already know about the topic.

Of course, the ideal position for reading is something you can never find. In the old days they used to read standing up, at a lectern. People were accustomed to standing on their feet, without moving. They rested like that when they were tired of horseback riding. Nobody ever thought of reading on horseback; and yet now, the idea of sitting in the saddle, the book propped against the horse's mane, or maybe tied to the horse's ear with a special harness, seems attractive to you. With your feet in the stirrups, you should feel quite comfortable for reading; having your feet up is the first condition for enjoying a read.

Well, what are you waiting for? Stretch your legs, go ahead and put your feet on a cushion, on two cushions, on the arms of the sofa, on the wings of the chair, on the coffee table, on the desk, on the piano, on the globe. Take your shoes off first. If you want to, put your feet up; if not, put them back. Now don't stand there with your shoes in one hand and the book in the other.

Italo Calvino, *If on a Winter's Night a Traveler* Chapter 1°

In the text, what attitude does the narrator have towards the reader?

- A) A very intrusive narrator: the narrator not only gives various pieces of advice to the reader but expects them to follow the advice to the letter, to the point of elaborating each small detail
- B) A very ironic narrator: the narrator not only kids the reader about which position to assume while reading, but jokes about why people read
- C) The narrator reveals the complex relationship that people have with reading, and speaks directly to the reader, saying that there are no rules to follow
- D) A very sarcastic narrator: the narrator gives various pieces of advice to the reader but reveals that with the arrival of television reading has become less popular
- E) The narrator tells the reader that if reading and literature fail, they are innocuous, if they follow certain rules, and cannot produce devastating effects

Logical reasoning and problems Test

5. How many two-digit numbers have a quotient of 7 and a remainder of 0 when they are divided by the sum of their digits and a quotient of 10 and a remainder of 1 when divided by the product of their digits?

- A) 1
- B) 21
- C) 0
- D) 12
- E) 7

6. Which of the following uses a formula to express the deduction rule of syllogism?

- A) $((p \rightarrow q) \wedge (q \rightarrow r)) \rightarrow (p \rightarrow r)$
- B) $((p \rightarrow q) \wedge p) \rightarrow q$
- C) $((p \rightarrow q) \wedge (\neg q)) \rightarrow (\neg p)$
- D) $((\neg q) \rightarrow (\neg p)) \wedge p \rightarrow q$
- E) $((p \rightarrow q) \wedge (\neg p)) \rightarrow (\neg q)$

7. The incline of a road is the ratio between its height h and its horizontal distance s . Which of the following statements is definitely false?

- A) An angle of 10° corresponds to an incline of 10%
- B) An incline of 80% corresponds to an angle of 36°
- C) An angle of 18° corresponds to an incline of 40%
- D) The maximum incline of 100% corresponds to an angle of 45°
- E) An incline of 70% corresponds to an angle of slightly greater than 30°

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8. Shelly, Kelly, Skipper, and Krissy go to the same pool, where each trains for a different sport: platform diving, springboard diving, synchronized swimming, and water polo. Every day from Tuesday to Friday, the pool is reserved from 2 PM to 5 PM for training in one of the disciplines. Given that:
- Krissy trains either Thursdays or Fridays;
 - The person who does synchronized swimming trains the day after water polo training and the day before springboard diving training;
 - Kelly dives from the 10-meter platform and does not train on Tuesdays;
 - Skipper trains the day after Shelly.
- On the basis of the information provided above, which of the following combinations is correct?

- A) Skipper – synchronized swimming – Wednesday
- B) Krissy – springboard diving – Tuesday
- C) Kelly – platform diving – Thursday
- D) Shelly – water polo – Wednesday
- E) Kelly – water polo – Friday

9. What is the largest even number for which the difference between the squares of two consecutive odd numbers is always divisible?

- A) 8
- B) 4
- C) 2
- D) 6
- E) The difference between the squares of two consecutive odd numbers is not divisible by any even number

Biology Test

10. What occurs during the 'interphase' cell cycle?

- A) The cell prepares to undergo cellular division
- B) Homologous chromosomes exchange genetic material in a process called 'crossing-over'
- C) The cell is in a quiescent phase in which there is no metabolic activity
- D) The cell divides in three phases known as G₁, S and G₂
- E) The chromosomes are arranged on the equatorial plate

11. Which characteristic do obligate anaerobes have?

- A) They only live in the absence of molecular oxygen
- B) They only live in the presence of a large quantity of carbon dioxide
- C) Their metabolism is accomplished through cellular respiration
- D) They only live in the presence of molecular oxygen
- E) Their metabolism is accomplished through photosynthesis

12. What happens to a cell when it is immersed in a hypotonic solution?

- A) It absorbs water through osmosis
- B) It releases molecules and ions through intense active transport
- C) It is in equilibrium with the solution
- D) It loses water until it dehydrates
- E) It absorbs water through active transport

13. What kind of monosaccharide is ribose?

- A) Pentose
- B) Hexose
- C) Triose
- D) Tetrose
- E) Nonose

14. What is the difference between meiosis and mitosis?

- A) Homologous chromosomes pair up during meiosis but not during mitosis
- B) There is no DNA duplication during meiosis
- C) There is double DNA duplication during meiosis
- D) Meiosis is a characteristic of haploid organisms
- E) There is no DNA duplication during mitosis

15. What is the cytoskeleton?

- A) It is a network of protein filaments present in the cytoplasm which provides shape and support to the cells
- B) It is a glycoprotein network present in the cytoplasm which provides shape and support to the cells
- C) It is a network of glycolipids present in the cytoplasm which provides shape and support to the cells
- D) It is a lipid network present in the cytoplasm which provides resistance to cell deformation
- E) It is a network of fibrous proteins present in the cell wall which provides shape and support

16. What are lysosomes?

- A) They are organelles that contain enzymes responsible for the hydrolysis of macromolecules
- B) They are specific cells with the ability to break down waste substances
- C) They are specific cells with the ability to phagocytize circulating pathogens
- D) They are organelles containing specific enzymes that phosphorylate macromolecules
- E) They are organelles that contain fatty acids with the ability to oxidize macromolecules

17. Which of the following takes place in peroxisomes?

- A) Certain important metabolic pathways
- B) The synthesis of lipids
- C) Certain important reactions of photosynthesis
- D) The synthesis of DNA
- E) The synthesis of ATP

18. During exocytosis:

- A) the cell releases material
- B) the cell engulfs material
- C) the cell activates cytokinesis
- D) the cell activates transcription
- E) the cell activates translation

19. Signal molecules can be:

- A) either proteins or lipids
- B) only proteins
- C) only lipids
- D) triglycerides
- E) only steroids

20. The receptors for the lipid hormones are found:

- A) in the cytoplasm
- B) in the ribosomes
- C) in the mitochondria
- D) in the centrioles
- E) on the plasma membrane

21. As the substrate concentration increases, the rate of an enzyme reaction (until the enzyme becomes saturated):

- A) increases
- B) decreases
- C) remains unchanged
- D) depends on the type of enzyme
- E) depends on the type of active site

22. Which of the following terms is NOT associated with passive transport across the plasma membrane?

- A) ATP hydrolysis
- B) Ions moving according to the concentration gradient
- C) Diffusion
- D) Channel protein
- E) Symporter

23. Autosomes are:

- A) chromosomes that are not sex chromosomes
- B) chromosomes that determine sex
- C) chromosomes that are autonomous
- D) chromosomes that divide during the second meiotic phase
- E) chromosomes lost during genomic mutations

24. In mitosis, the separation of sister chromatids occurs during:

- A) anaphase
- B) telophase
- C) prophase
- D) cytokinesis
- E) the S phase

25. Protozoa are:

- A) single-celled eukaryotic organisms
- B) single-celled procaryotic organisms
- C) multi-celled eukaryotic organisms
- D) a type of bacteria
- E) very large viruses

26. In humans:

- A) no autosomal monosomy is compatible with life
- B) among monosomies, only monosomy of chromosome 21 is compatible with life
- C) among trisomies, only trisomy of chromosome 21 is compatible with life
- D) no monosomy is compatible with life
- E) no monosomy of sex chromosomes is compatible with life

27. The paracrine signalling pathway is characterised by:

- A) ligands which act on receptors present on adjacent cells
- B) ligands which act on receptors present on the same cell
- C) ligands which act on receptors present on distant cells
- D) ligands which act on intercellular receptors
- E) ligands which are exclusively steroid in nature

28. In the determination of blood groups at the AB0 locus, individuals whose genotype is I^A/I^B have blood type AB. This is an example of:

- A) codominance
- B) incomplete dominance
- C) variable expressivity
- D) somatic mosaicism
- E) epistasis

29. In incomplete dominance:

- A) the heterozygote shows an intermediate phenotype between those of the two homozygotes
- B) the heterozygote can exhibit a phenotype that is indifferently equal to either of the two homozygotes
- C) the heterozygote can display a wide range of phenotypes
- D) the same genotype can produce different phenotypes
- E) the heterozygote displays the same phenotype as the recessive homozygote

30. In species such as humans, where the determination of sex occurs through the X and Y chromosomes, males ...

- A) are called hemizygotes, because of the genes present on the X chromosome
- B) are called haploids, because of the genes present on the X chromosome
- C) are called monosomic, because of the genes present on the X chromosome
- D) are called nullisomic, because of the genes present on the X chromosome
- E) do not have genes present on the X chromosome

31. Which of the following statements is FALSE? The liver:

- A) transmits nervous impulses to the pancreas
- B) contributes to the metabolism of lipids
- C) regulates blood glucose
- D) metabolises toxic substances
- E) is responsible for the production of bile

32. Two parents have blood group A Rh+ (heterozygous for both genes) and B Rh- (homozygous for both genes).

Which of the following statements about their children's blood groups is NOT correct?

- A) 25% of their children will have blood group A Rh-
- B) 25% of their children will have blood group AB Rh+
- C) None of the children will have group O
- D) 25% of their children will have blood group B Rh+
- E) 50% of children will have blood group Rh-

Chemistry Test

33. Which of the following statements is correct?

- A) According to Brønsted and Lowy, a base is defined as a substance capable of acquiring protons
- B) According to Brønsted and Lowy an acid is defined as a substance capable of acquiring hydroxide ions
- C) According to Lewis an acid is a donor of pairs of electrons
- D) According to Lewis a base is an acceptor of pairs of proteins
- E) According to Arrhenius a base releases hydrogen ions in water

34. To neutralise 25mL of sulphuric acid solution 15 mL of a 2.5M solution of NaOH are needed. What is the concentration of the sulphuric acid solution?

- A) 0.75M
- B) 1.5M
- C) 3M
- D) 1.25M
- E) 0.5M

35. Which of the following gases present in the atmosphere can cause the formation of acid rain when reacting with water?

1) CH₄ 2) NH₃ 3) N₂ 4) NO₂ 5) SO₂

- A) 4 and 5
- B) 3 and 4
- C) 1 and 2
- D) 2 and 4
- E) 1 and 3

36. What is the pH of a 0.5M solution of a weak monoprotic acid whose $K_a=1,8 \times 10^{-5}$?

- A) 2.5
- B) 4.3
- C) 1.7
- D) 6.8
- E) 8.7

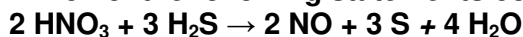
37. When a chemical reaction occurs in multiple stages, its speed is:

- A) conditioned by the slowest stage
- B) conditioned by the fastest stage
- C) the average of the speed of the various stages
- D) the same as it would be if the reaction had only one stage
- E) the measured speed when 50% of the products have been transformed into reactants

38. In a chemical reaction, what can be defined as "the difference between the energy content of the activated complex and that of the reactants"?

- A) Activation energy
- B) Reaction energy
- C) Entropy
- D) Enthalpy
- E) Free energy

39. Which of the following statements concerning the reaction



is NOT correct?

- A) 2 electrons are exchanged
- B) It is an oxidation-reduction reaction
- C) The nitrogen is reduced
- D) 6 electrons are exchanged
- E) The sulphur is oxidised

40. Which of the following is the formula for ethylmethylamine?

- A) $\text{CH}_3\text{NHCH}_2\text{CH}_3$
- B) $\text{CH}_2\text{CH}_3\text{NHCH}_2$
- C) $\text{CH}_3\text{NH}_2\text{CH}_2\text{CH}_3$
- D) $\text{CH}_3\text{C}_2\text{H}_5\text{NH}_2$
- E) $\text{CH}_3\text{CH}_2\text{CH}_3\text{NH}_3$

41. Which of the following statements concerning carboxylic acids is NOT correct?

- A) They can be obtained by reducing an aldehyde
- B) They are generally weak acids
- C) They can form intermolecular hydrogen bonds
- D) Those with lower molecular weight are water-soluble
- E) They form salts when they react with strong bases

42. Heterocyclic compounds are cyclic compounds that:

- A) contain at least one atom other than carbon within the ring structure
- B) contain at least one benzene ring
- C) form isomers with ring structures containing a varying number of carbon atoms
- D) contain 2 or more ring structures with a varying number of carbon atoms
- E) contain 2 or more ring structures, at least one of which is a benzene ring

43. Which of the following statements concerning alkenes is NOT correct?

- A) Atoms joined by a double bond are *sp* hybrids
- B) They contain a carbon-carbon double bond
- C) They can present geometric isomers
- D) They can undergo electrophilic addition reactions
- E) Ethylene and propylene do not present *cis-trans* isomers

44. Which of the following statements is correct?

- A) The product of the condensation of two carboxylic acids is an anhydride
- B) The general formula of secondary amines is $\text{R-NH}_2\text{-R}'$
- C) The reaction between a carboxylic acid and an amine produces an ester
- D) Aldehydes and ketones are characterised by the presence of the carboxylic group
- E) Ethers have the general formula $\text{R-O-O-R}'$

45. Starches can be obtained through a condensation reaction between:

- A) derivatives of carboxylic acids and ammonia
- B) secondary alcohols and ammonia
- C) tertiary alcohols and ammonia nitrate
- D) ethers and ammonium hydroxide
- E) aldehydes and ammonium hydroxide

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46. Phenols are compounds in which one or more hydrogen atoms of an aromatic ring are replaced with:

- A) an $-OH$ group
- B) a $-COOH$ group
- C) a $-CHO$ group
- D) an $-NH_2$ group
- E) an $=O$ group

47. Which class of organic compounds does urea — the formula for which is $(NH_2)_2CO$ — belong to?

- A) Diamides
- B) Amines
- C) Amino Acids
- D) Nitriles
- E) Ammonia salts

Physics and Mathematics Test

48. The pressure exerted by a force on a surface measures $1 \mu Pa$ (microPascal). How many Pascals (Pa) does this correspond to?

- A) 10^{-6}
- B) 10^{-9}
- C) 10^{-12}
- D) 10^9
- E) 10^{12}

49. On a homogeneous rod AB with weight P and length $2L$, fixed at one end A , parallel force equivalent to P with an intensity of $2P$ is applied at point C (located $L/2$ away from B). Determine the magnitude and direction of the force parallel to P that must be applied at point B for the rod to be in equilibrium.

- A) Magnitude: $2P$; direction: opposite to P
- B) Magnitude: $2P$; direction: in agreement with P
- C) Magnitude: P ; direction: opposite to P
- D) Magnitude: P ; direction: in agreement with P
- E) The given data are not sufficient to answer the question

50. In an isobaric compression, the magnitude of the work done by the gas is 5000 J. If the transformation occurs at a pressure of 5×10^5 Pa and the initial volume is 30 dm^3 , what is the final volume of the gas measured in cubic meters?

- A) 2×10^{-2}
- B) 20
- C) 40
- D) None of the other answers
- E) 4×10^{-2}

51. A skydiver falls with a constant velocity due to air resistance. If, 25 seconds before landing, she finds herself at an altitude of 180 m, what will her altitude be 5 s before landing?

- A) 36 m
- B) 12 m
- C) 7.2 m
- D) 45 m
- E) 28.8 m

52. A block of wood is stationary on a flat, perfectly smooth surface. Which of the following statements is false?

- A) The block of wood is kept stationary by static friction
- B) The block of wood exerts on the surface a force equal and opposite to the force exerted by the surface on the block of wood
- C) The block of wood is in equilibrium
- D) The weight force acting on the block of wood is balanced by the normal reaction which develops at the separation surface
- E) Given that the surface is flat and perfectly smooth, there is no frictional force

53. Which of the following conservation laws is NOT valid?

- A) Conservation of potential energy in the presence of conservative forces
- B) Conservation of electric charge
- C) Conservation of mechanical energy
- D) Conservation of momentum
- E) Conservation of angular momentum

54. The equation $3x^2 - 7x + 2 = 0$:

- A) has a positive discriminant equal to 25
- B) has a positive discriminant equal to 5
- C) has a positive discriminant equal to 73
- D) has a negative discriminant
- E) has a null discriminant

55. The domain of the function $f(x) = \frac{e^x}{\sqrt{x^2 - 4}}$ is:

- A) $(-\infty, -2) \cup (2, +\infty)$
- B) $(2, +\infty)$
- C) $(0, 2)$
- D) $(-2, 0)$
- E) $(-\infty, -2)$

56. Given a right triangle with the lengths of the legs being 3 cm and 4 cm respectively. What is the length of the altitude relative to the hypotenuse?

- A) 2,4 cm
- B) 1,2 cm
- C) 5 cm
- D) This cannot be calculated with these data
- E) 6 cm

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57. Given parallelepiped with a square base, where the side of the base measures 4 cm, and the height is 5 cm, what is its volume?

- A) 80 cm^3
- B) 20 cm^3
- C) 100 cm^3
- D) 60 cm^3
- E) This cannot be calculated with these data

58. Given an equilateral triangle with a side of 4 cm, what is its area?

- A) $4\sqrt{3} \text{ cm}^2$
- B) 8 cm^2
- C) 16 cm^2
- D) $4\sqrt{2} \text{ cm}^2$
- E) This cannot be calculated with these data

59. The number $16^{-\frac{1}{2}}$ is equal to:

- A) $1/4$
- B) 4
- C) 32
- D) $1/32$
- E) 8

60. The set of divisors for the number 60 is:

- A) $\{1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60\}$
- B) $\{1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 45, 60\}$
- C) $\{2, 3, 4, 5, 6, 10, 12, 15, 20, 30\}$
- D) $\{10, 20, 30, 60\}$
- E) $\{5, 10, 15, 30, 45\}$

***** FINE DELLE DOMANDE *****