**OLIMPIADA NAȚIONALĂ DE BIOLOGIE**

**ETAPA JUDEȚEANĂ/A SECTOARELOR MUNICIPIULUI BUCUREȘTI, 13 martie 2022**

**PROBA TEORETICĂ, CLASA a XII-a**

**BAREM DE CORECTARE**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Nr. item** | **Răspuns** | **Nr. item** | **Răspuns** | **Nr. item** | **Răspuns** |
| **1.** | D | **25.** | B | **49.** | E |
| **2.** | C | **26.** | B | **50.** | D |
| **3.** | B | **27.** | C | **51.** | B |
| **4.** | B | **28.** | B | **52.** | A |
| **5.** | B | **29.** | B | **53.** | E |
| **6.** | D | **30.** | C | **54.** | C |
| **7.** | A | **31.** | C | **55.** | A |
| **8.** | B | **32.** | A | **56.** | B |
| **9.** | B | **33.** | D | **57.** | C |
| **10.** | A | **34.** | E | **58.** | C |
| **11.** | C | **35.** | A | **59.** | A |
| **12.** | B | **36.** | C | **60.** | D |
| **13.** | D | **37.** | B | **61.** | A |
| **14.** | C | **38.** | C | **62.** | B |
| **15.** | B | **39.** | A | **63.** | D |
| **16.** | D | **40.** | E | **64.** | D |
| **17.** | D | **41.** | C | **65.** | A |
| **18.** | C | **42.** | C | **66.** | D |
| **19.** | C | **43.** | C | **67.** | C |
| **20.** | C | **44.** | B | **68.** | D |
| **21.** | D | **45.** | B | **69.** | D |
| **22.** | B | **46.** | E | **70.** | B |
| **23.** | C | **47.** | C |  |  |
| **24.** | A | **48.** | E |  |  |

**OLIMPIADA NAȚIONALĂ DE BIOLOGIE**

**ETAPA JUDEȚEANĂ/A SECTOARELOR MUNICIPIULUI BUCUREȘTI, 13 martie 2022**

**PROBA TEORETICĂ, CLASA a XII-a,**

**BAREM DE CORECTARE PENTRU COMISIE**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Nr. item** | **Răsp.** | **Manual** | **Pg.** | **Nr. item** | **Răsp.** | **Manual** | **Pg.** | **Nr. item** | **Răsp.** |  | **Pg.** |
| **1.** | D | Corint, | 23 | **25.** | B | Corint | 85 | **49.** | E | Corint | 27 |
| **2.** | C | EDP | 24 | **26.** | B | CDPress; EDP | 12,10 | **50.** | D | Corint | 63 |
| **3.** | B | Corint | 23 | **27.** | C | Corint | 64 | **51.** | B | Corint | 63-64 |
| **4.** | B | Corint | 17 | **28.** | B | Corint | 23 | **52.** | A | Corint | 43,64 |
| **5.** | B | CD Press | 6 | **29.** | B | CDPress | 15 | **53.** | E | Gimnasium | 71-72 |
| **6.** | D | Corint | 23 | **30.** | C | EDP | 56 | **54.** | C | Corint; CDPress | 85-86; 48 |
| **7.** | A | Corint, Gimnasium | 11; 17 | **31.** | C | Corint | 59,64 | **55.** | A | Gimnasium | 71 |
| **8.** | B | EDP | 59 | **32.** | A | CDPress | 27 | **56.** | B | Corint; EDP | 27; 27 |
| **9.** | B | CDPress | 24-25 | **33.** | D | Corint | 55 | **57.** | C | Gimnasium | 25 |
| **10.** | A | Gimnasium | 71 | **34.** | E | EDP | 12 | **58.** | C | Corint | 21 |
| **11.** | C | CDPress | 48 | **35.** | A | Corint | 20-21 | **59.** | A | Corint | 83 |
| **12.** | B | CDPress | 37 | **36.** | C | EDP | 19 | **60.** | D | Corint | 59,65 |
| **13.** | D | Gimnasium | 16-17 | **37.** | B | Gimnasium | 67 |  |  |  |  |
| **14.** | C | Gimnasium | 33 | **38.** | C | EDP | 33-34 |  |  |  |  |
| **15.** | B | Gimnasium | 34 | **39.** | A | EDP | 36 |  |  |  |  |
| **16.** | D | Gimnasium | 60-61 | **40.** | E | EDP | 42 |  |  |  |  |
| **17.** | D | Gimnasium | 67 | **41.** | C | EDP; Corint | 15; 17 |  |  |  |  |
| **18.** | C | Corint | 28 | **42.** | C | Gimnasium | 31 |  |  |  |  |
| **19.** | C | Corint | 27 | **43.** | C | Gimnasium | 30 |  |  |  |  |
| **20.** | C | EDP | 9-10 | **44.** | B | CDPress | 49 |  |  |  |  |
| **21.** | D | Gimnasium | 69-70 | **45.** | B | EDP | 19-20 |  |  |  |  |
| **22.** | B | EDP | 42 | **46.** | E | Corint | 13 |  |  |  |  |
| **23.** | C | Corint | 55 | **47.** | C | Corint | 25 |  |  |  |  |
| **24.** | A | Corint | 39 | **48.** | E |  |  |  |  |  |  |

**III. PROBLEME**

**61. A (EDP, pg. 29)**

Un nucleosom ( 2x4 histone); 71: 8 = 8 nucleosmi si rest 7 H1

**62. B (CD PRESS, pg. 8)**

ADN zona activă metabolic->forma B are 10perechi de baze/ rotatie->120 perechi de baze

**63. D (EDP, pg. 11)**

98 – 45 =53; 53-3 = 50

**64. D (Corint, pg. 58)**

Bărbatul:P1p1P2p2; ll; femeia:P1p1P2p2;LBl

Copii unul este alb -p1p1p2p2 iar al-2-lea copil este negru- P1P2P1P2

**65. A (Gimnasium, pg. 16-17)**

Nr. de nucleotide cu A=6280x30/100=1884=nr. de nucleotide cu T→1884 leg duble de H

A+T+C+G=6280

A+T=1884x2=3768

C+G=6280-3768=2512

C=G=2512/2=1256→1256 leg triple de H

1884 leg duble de H molecula de ADN denaturează/renaturează ușor/rapid

1256 leg triple de H

-fragment de ADN dintr-o zonă cu eucromatină atunci este vorba despre tipul B de ADN, care este dextrogir, cu diametrul moleculei de 20 de Å.

**66. D (Gimnasium, pg. 70 și Coring, pg. 57)**

Caracterul absenta gropitei este recesiv (mm), iar daltonismul este moștenit de la mamă.

Singura variantă care duce la apariția unui copil daltonist fara gropita (XdY mm) este varianta D: XdX Mm X XdY mm :

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Gameți feminini  masculini | XdM | Xdm | XM | Xm |
| Xdm | XdXdMm | XdXdmm | XdXMm | XdXmm |
| Ym | XdYMm | XdYmm | XYMm | XYmm |

**67. C (Corint, pg. 62)**

|  |  |  |
| --- | --- | --- |
| XY XX | X | X |
| XY | XXY –25% sindrom Klinefelter | XXY – 25% sindrom Klinefelter |
| O | XO – 25% sindrom Turner | XO – 25% sindrom Turner |

**68. D (EDP, pg. 52)**

ll si LBl

**69. D (Corint, pg. 60-61)**

Hemofilia-boală X-linkată recesivă- femeie purtătoare XhX, bărbat bolnav XhY

Albinismul-boală cu transmitere autozomală recesivă- sănătos AA, purtător Aa, bolnav aa

copil cu hemofilie și albinism (XhYaa)- mama XhXAa, tata XYAa

**70. B (Gimnasium, pg. 73-74, Corint, pg. 58)**