

### 1-topshiriq (7 ball)

1-qism. (4 ball)

1. Ushbu kasallikni keltirib chiqaradigan gen autosomada joylashgan bo'lib, retessiv tipda irsiylanadi. = 2 ball

2.  $8/12$  yoki  $66,67\% = 2$  ball

2-qism. (3 ball)

Javob:  $110 \text{ ta} = 3$  ball

### 2-topshiriq (7 ball)

1. Yovvoyi tipdagi oqsilni kodlagan DNK dagi nukleotidlar ketma-ketligi:

.....	ACC	TCC	AAA	TAC	CGT	TAA	.....
	Thr	Ser	Lys	Tyr	Arg	Terminator	

Terminator triplet oqsil sintezini tugashini bildiradi.

Mutant oqsilni kodlagan DNK dagi nukleotidlar ketma-ketligi:

.....	ACC	TCC	AAA	TAC	CGT	CAA	GCT	GGA	GCC	.....
	Thr	Ser	Lys	Tyr	Arg	Gln	Ala	Glu	Ala	

Yovvoyi tipdagi oqsilni kodlagan DNK dagi nukleotidlar ketma-ketligi to'g'ri yozilgan bo'lsa, = 3 ball

2. Hb Constant Spring mutatsiyasida terminator triplet mutatsiyaga uchrab, aminokislotani kodlovchi kodonga aylandi. = 2 ball

3. Hb Constant Spring mutatsiyasida terminator triplet mutatsiyaga uchrab, aminokislota kodlovchi kodonga aylandi. Shundan so'ng 31 ta aminokislota kodoni yoki 93 ta nukleotiddan so'ng, terminator triplet mavjud. = 2 ball

### 3-topshiriq (10 ball)

1.

Bo'g'inlar	AA x aa Genotiplar nisbati	Genotiplarning takrorlanishi (%)		Baholanish: To'g'ri yozilgan gorizantal qator uchun
		gomozogota	geterozigota	
F <sub>1</sub>	Aa	0	100	1 ball
F <sub>2</sub>	1AA : 2Aa : 1aa	50	50	1,5 ball
F <sub>3</sub>	6AA : 4Aa : 6aa yoki 3AA : 2Aa : 3aa	75	25	1,5 ball
F <sub>4</sub>	14AA : 4Aa : 14aa yoki 7AA : 2Aa : 7aa	87,5	12,5	1,5 ball
F <sub>5</sub>	30AA : 4Aa : 30aa yoki 15AA : 2Aa : 15aa	93,75	6,25	1,5 ball

2. Javob:  $6,25\% = 1,5$  ball

3. Javob:  $43,75\% = 1,5$  ball

**4-topshiriq. (10 ball)**

1-qism (4 ball)

1.  $\text{---} b \text{---} a \text{---} c \text{---}.$  = 2 ball

2.  $b \text{---} 20,6 \text{ cm} \text{---} a \text{---} 14,0 \text{ cm} \text{---} c.$  = 2 ball

2-qism. (6 ball)

Sepkillarning bo‘lishini (S), sepkillarning bo‘lmasligini (R) deb belgilasak:

1. 5 ta farzandning tug‘ilish ketma-ketligi quyidagicha.

1-ehtimollik. S-S-S-R-R

2-. S-S-R-S-R

3-. S-S-R-R-S

4-. S-R-S-S-R

5-. S-R-S-R-S.

6-. S-R-R-S-S.

7-. R-S-S-S-R.

8-. R-S-S-R-S.

9-. R-S-R-S-S

10-. R-R-S-S-S

Jami: 10 xil kombinatsiya = 2 ball

2.  $S! + R! / S! \times R! = 3! + 2! / 3! \times 2! = 10\% = 2$  ball

3. Mazkur oilada eng kamida 1 ta farzandning sepkinsiz tug‘ilishi mumkin bo‘lgan kombiyatsilari soni 5 xil:

1. 4S 1R

2. 3S 2R

3. 2S 3R

4. 1S 4R

5. 5R

Hammasi sepkilli tug‘ilishi ehtimoli:

$$(3/4) \times (3/4) \times (3/4) \times (3/4) \times (3/4) = 0.24$$

$$1 - 0.24 = 0.76$$

$$0.76 \times 100 = 76\% = 2 \text{ ball}$$

## 5-topshiriq (16 ball)

1-qism.(10 ball)

1.

Ma'lumotlar	Organizmlar soni				Jami
	Sariq, silliq	Sariq, burishgan	Yashil, silliq	Yashil, burishgan	
Olingan (P)	1818	559	593	150	3120
Kutilgan nisbat	9	3	3	1	16
Nazariy jihatdan kutilgan – q	1755	585	585	195	3120
Farq – d	+63	-26	+8	-45	-
Farqning kvadrati – d <sup>2</sup>	3969	676	64	2025	-
Nisbat – d <sup>2</sup> /q	2,26	1,155	0,109	10,385	13,909

Javob: 13,909 = 5 ball

2. Fisher jadvalidagi 3-qatordagi (4 ta fenotipik sinf bo'lganini uchun, 3-qator olinadi (4-1=3)) 0,05 ehtimollik kesishmasidagi son aniqlanadi = 7,815. = 3 ball

3. YO'Q, Nol gepotezasiga mos kelmaydi. Sababi hisoblangan  $\chi^2$  miqdori Fisher jadvalidagi  $\chi^2$  miqdoridan katta, 13,909 > 7,815. = 2 ball

2-qism. (6 ball)

1-ehtimollik. Ota-ona: AORr × OOrr

Avlod: AORr; OOrr; Aorr; Oorr

Bularning ikkitasi ya'ni **50% ida** gemolitik kasallik paydo bo'ladi: AORr, OOrr

2-ehtimollik. Ota-ona: AARr × OOrr

Avlod: AORr; Aorr;

Bularning bittasi ya'ni **50% ida** gemolitik kasallik paydo bo'ladi: AORr,

3-ehtimollik. Ota-ona: AORR × OOrr

Avlod: AORr; OOrr;

Bularning ikkitasi ya'ni **100% ida** gemolitik kasallik paydo bo'ladi: AORr; OOrr

4-ehtimollik. Ota-ona: AARR × OOrr

Avlod: AORr

Bu avlodda, **100%** ida gemolitik kasallik paydo bo'ladi: AORr,

4ta ehtimollikning har biri uchun 0,5 balldan, jami 2 ball beriladi.


YOKI 50% va 100% javoblari berilgan bo'lsa ham 2 ball.


Yoki 50% va 100% javoblaridan bittasi yozilgan bo'lsa 1 ball.

2. Buning sababi ona resus omilga ega emas ya'ni rr. Shu sababdan resus musbat qonli farzandlarga ona qoni antitanalari ta'sir qilishi sababli farzandlarda gemolitik kasallik vujudga keladi. = 1 ball

3. = 3 ball

		Donor							
Recipient	Blood Type	O-	O+	A-	A+	B-	B+	AB-	AB+
	O-	✓	✗	✗	✗	✗	✗	✗	✗
	O+	✓	✓	✗	✗	✗	✗	✗	✗
	A-	✓	✗	✓	✗	✗	✗	✗	✗
	A+	✓	✓	✓	✓	✗	✗	✗	✗
	B-	✓	✗	✗	✗	✓	✗	✗	✗
	B+	✓	✓	✗	✗	✓	✓	✗	✗
	AB-	✓	✗	✓	✗	✓	✗	✓	✗
	AB+	✓	✓	✓	✓	✓	✓	✓	✓

 Accepts Red Blood Cells from

 Red Blood Cells Not Compatible

Light Yellow = Accepts Plasma Transfusion only

Bright Yellow = Accepts Full Blood Transfusion

White = No Plasma Compatibility