

**CLASS XII
BIOLOGY (044)
MARKING SCHEME
TERM 1 (2021-22)**

Q.NO.	ANSWER	MARKS						
	SECTION- A							
1.	D. 2 thecae, 4 sporangia	1						
2.	B. 3,3,2 3 in chalazar end 3 in the micropolar end and 2 nuclei in the center.	1						
3.	B. Free nuclear endosperm	1						
4.	A. sporopollenin	1						
5.	B. ii, iii	1						
6.	A) (i) and (iv)	1						
7.	C. blastocyst, Fertilized egg, Unfertilized egg	1						
8.	B. completion of meiosis II	1						
9.	C. FSH, estrogen, progesterone	1						
10.	C. small, White, Small, covered with mucilage	1						
11.	C. strawberry	1						
12.	B. 2	1						
13.	D. i, ii and iv	1						
14.	D. Glutamic acid is substituted by Valine in β chain at the sixth position	1						
15.	D. Polygenic and quantitative inheritance	1						
16.	B. Male 16, Female 32	1						
17.	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 45%;">Rajesh</td> <td style="width: 50%;">Mahesh</td> </tr> <tr> <td>B</td> <td>Thalassemia – an autosome linked recessive blood disorder</td> <td>Sickle cell anaemia - an autosome linked recessive trait</td> </tr> </table>		Rajesh	Mahesh	B	Thalassemia – an autosome linked recessive blood disorder	Sickle cell anaemia - an autosome linked recessive trait	1
	Rajesh	Mahesh						
B	Thalassemia – an autosome linked recessive blood disorder	Sickle cell anaemia - an autosome linked recessive trait						
18.	D. (ii) and (iv)	1						
19.	B. 5' (upstream) end and 3' (downstream) end, respectively of the transcription unit	1						

20.	B. exons appear but introns do not appear in the mature RNA	1			
21.	A. lactose is present, and it binds to the repressor	1			
22.	B. DNase inhibited transformation	1			
23.	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="padding: 5px;">B</td> <td style="padding: 5px;">Methionine</td> <td style="padding: 5px;">UAC</td> </tr> </table>	B	Methionine	UAC	1
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24.	A. Probes	1			
SECTION - B					
25.	C. A is true but R is false	1			
26.	D. A is False but R is true	1			
27.	C. A is true but R is False.	1			
28.	C. A is true but R is false	1			
29.	A. i and ii	1			
30.	A. antipodal, zygote and endosperm	1			
31.	A. The flower type which survived is Cleistogamous and it will always exhibit autogamy	1			
32.	D. activate smooth muscles	1			
33.	B. GIFT	1			
34.	B. decrease the movement of the sperms	1			
35.	C. 500	1			
36.	D. 60 Out of 9:3:3:1 = 16 9+3 will be tall. Therefore, $\frac{12}{16} \times 80 = 60$.	1			
37.	C. 2 Red: 2 Pink	1			
38.	D. Aa x aa	1			
39.	B. Autosomal recessive	1			
40.	B. 50%	1			
41.	B. Ab X Ab	1			

42.	B. It is a single stranded DNA	1
43.	C. 40,000 bp and $13,600 \times 10^{-9}$ m	1
44.	B. A is having 2'-OH group which makes it more reactive and structurally unstable whereas B is having 2'-H group which makes it less reactive and structurally stable	1
45.	D. 0:1:31	1
46.	C. (i) Capping (ii) Polyadenylation (iii) $^mG_{ppp}$. (iv) Poly(A).	1
47.	C. Short non-coding repetitive sequence forming large portion of eukaryotic genome	1
48.	C. A. Children 1 & 3	1
SECTION - C		
49.	C. luteinizing hormone	1
50.	B. Progesterone	1
51.	C. There will be no observed data for Hormone B	1
52.	A. Corpus Luteum	1
53.	D. 280 days	1
54.	B) Subject 2 is pregnant	
55.	B. ii, iii, iv, v	1
56.	C. Affected individual is a female with Down's syndrome	1
57.	D. Deviation from 9:3:3:1 ratio because of linkage of genes	1
58.	C. Translation- Elongation	1
59.	D. (i)- continuous synthesis , (ii)- discontinuous synthesis (iii) 3' end (iv) 5'end	1
60.	C: (i) Promotor Site, (ii) Sigma factor (iii) RNA polymerase	1

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**Marking Scheme in lieu of diagram based questions for VI candidates
Total Alternative Questions - 20**

Section - A

2.	C. one meiotic and three mitotic divisions
5.	C. nucellus One meiotic and 3 mitotic divisions.
7.	C. Unfertilized egg/ Fertilized egg/ Blastocyst
10.	B. water
23.	C i, ii, and iv

Section - B

29.	C. secretes oxytocin
39.	A. It verifies that DNA is the carrier of genetic information.
44.	D. Hydroxyl
48.	D. 50% bands similar to father and rest similar to mother

Section – C

	A biology student after studying about the different levels of hormones during the menstrual cycle was comparing 2 subjects (Patients) . A table was created after looking at the levels of hormones A and B for Subject 1 and 2. Read the information in the table and answer the questions that follow (Q49 to 54):
49.	C. Luteinizing Hormone
50.	B. Progesterone
51.	C. There will be no observed data for Hormone B
52.	A. Corpus Luteum
53.	D. 280 days
54.	B. Subject 2 is pregnant
56.	C. Due to failure of cytokinesis after telophase stage of cell division
57.	C. Aabb & aaBb
58.	C. to the small subunit; on the large subunit.
59.	A. DNA polymerase can read and synthesize only in the direction of 3'-to-5'
60.	C. When a rho site is reached.