
 University of Sadat City	Final Exam:	First term	Course Code:	C-101	Percentage	80%	 GEBRI
	Academic Year:	208-2019	Academic Program:	Master (Tardiness)	N. of Exam Paper	One	
	Level:	Master	Department:	General practical course	Date of exam	16/1/2019	
	Course Name:	Practical approaches in PCR.	Total score:	80	Time allowed:	3 hours	

Instructions of Exam:

1. Answer the obligatory questions.
2. Use the blue pen and pencil in answer sheet
3. Allow one sheet answer for every student
4. Is not allowed to borrow the tools (pen, pencils, drawing tools, calculator ...etc)
5. Is not allowed to use the cell phone or any of its application during the time of exam

Answer the following questions

First Question

Total score (20)

A- Can the next two programs of these two pairs of primer be used in multiplex PCR? And explain why? (10 marks)

Gene a, 94°C for 5 min, followed by 40 cycles of 1 min at 94°C, 45 s at 65°C, and 45 s at 72°C, with a final extension step of 5 min at 72°C.

Gene b, 94°C for 5 min, followed by 40 cycles of 1 min at 94°C, 45 s at 50°C, and 45 s at 72°C, with a final extension step of 5 min at 72°C;

B- What are the steps that should be done to minimize the risk of contamination that can lead to incorrect results of PCR? (10 Marks)

Third question

Total score (20)

A) You can find different problems with PCR amplification, what you will do if:

10 marks

- 1- Reaction was working before, but now you can't get any product.
- 2- Your PCR product is weak.

B) In a short report, summarize the applications of PCR amplification. 10 marks

Second Question

Total score (20)

Simple Sequence Repeat (SSR) Length Polymorphism is one of the PCR-based markers, talk about it briefly.

Fourth question

Total score (20)

A- Compare between:

(10 marks each)

- Standard PCR and multiplex PCR
- Primers characters used for Nested PCR and RAPD

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