



**Faculty of Health Sciences**

**Bachelor of Science Honours in Biomedical Sciences/  
Bachelor of Science Honours in Industrial Pharmaceutical Sciences /  
Bachelor of Science Honours in Cosmetic Science**

**BSM 1163 – General English**

**1<sup>st</sup> Year 1<sup>st</sup> Semester**

**Batch 05**

**End Semester SEQ Examination**

**INDEX NUMBER: .....**

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**Date : 28<sup>th</sup> of September 2021**

**Time : 09.00 am – 12.00 pm (Three Hours) - To answer the questions**

**12.00 pm – 12.30 pm (30 minutes) - To upload & email the compiled answer script**

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- The paper will be for three hours (9.00 am – 12.00 pm). You will be given an extra 30 minutes for submission.
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- **Label the PDF: Your Index No – General English SEQ**
- **Upload** the labelled **PDF to LMS AND** also **email** the PDF to [Fohs.exams@cinec.edu](mailto:Fohs.exams@cinec.edu)

**Question 01****(100 Marks)****Read the passage and answer the questions given below.**

1. The Coronavirus pandemic is the defining global health crisis of our time. Since its emergence late last year, the virus has spread to every continent except Antarctica. The World Health Organization has made the assessment that COVID-19 can be characterized as a pandemic, but it is a pandemic that can be controlled. COVID-19 is the infectious disease caused by the most recently discovered coronavirus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019. Countries are racing to slow the spread of the disease by testing and treating patients, carrying out contact tracing, limiting travel, quarantining citizens, and cancelling large gatherings such as sporting events, concerts, and schools.
2. The pandemic is moving like a wave—one that may yet crash on those least able to cope. But COVID-19 is much more than a health crisis. By stressing every one of the countries it touches, it has the potential to create devastating social, economic and political crises that will leave deep scars. Every country needs to act immediately to prepare, respond, and recover. The UN system will support countries through each stage, with a focus on the most vulnerable. Drawing on our experience with other outbreaks such as Ebola, HIV, SARS, TB and malaria, as well as our long history of working with the private and public sector, UNDP will help countries to urgently and effectively respond to COVID-19 as part of its mission to eradicate poverty, reduce inequalities and build resilience to crises and shocks.
3. During the COVID-19 outbreak, like all hospitals around the world, hospitals in Sri Lanka are also facing shortages of medical supplies, specifically Personal Protective Equipment (PPE) kits. At a critical time such as this where community effort was needed the most, UNDP was able to support the need of the hour through its ongoing Climate Change Adaptation Project (CCAP II) by teaming up with Green Coop. Through this initiative, garment factories established through the project in Polonnaruwa area were approached, seeking a solution to address the shortage of Personal Protective Equipment (PPE) by exploring methods of local production.
4. From their hardwork, 500 Personal Protective Equipment for healthcare workers, 250 patient safety kits and 1,400 masks were donated to healthcare workers in the frontlines in Colombo and Polonnaruwa. Recently, these safety kits were handed over to the Governor of the Western Province Mr. Roshan Goonatilleke and Provincial Director of Health Western Province Dr. Damayanthi Jayathilaka.
5. While we do this, we must also consider ways to prevent a similar pandemic recurring. In the longer term, UNDP will look at ways to help countries to better prevent and manage such crises and ensure that the world makes full use of what we will learn from this one. Ending the COVID-19 pandemic is our duty. Extraordinary times demand extraordinary measures. We face a colossal test, which demands decisive, coordinated and innovative action from all, for all.

1. In what continent we can't find the corona virus? (05 mark)  
.....
2. When and where did the first outbreak of corona virus take place? (05 mark)  
.....
3. Mention 4 steps taken by the countries to slow the spread of corona virus. (10 marks)  
.....  
.....
4. What is the author's main purpose of writing this article? (10 marks)  
.....  
.....
5. Why has the author mentioned that, 'corona virus is much more than a health crisis'? Support your answer referring to the text. (10 marks)  
.....  
.....
6. What is the mission of UNDP mentioned in the passage? (05 mark)  
.....  
.....
7. According to your point of view, as a developing country is Sri Lanka trying to minimize the spread of corona virus. Support your answer by giving reasons you have experienced. ( Word count 100) (15 marks)  
.....  
.....  
.....  
.....
8. What is the main idea of the following paragraphs? (20 marks)  
1-.....  
2-.....  
3-.....  
4-.....
9. Do you agree with the author's statement that everyone should cooperate to eradicate the virus? (15 marks)  
.....  
.....  
.....  
.....
10. Provide a suitable title for the passage. (05 marks)  
.....

**Question 02**

**(100 marks)**

**Part A**

**(50 marks)**

Fill in the blanks with the words given below in the box. (The first one has been done for you).

Showered	biggest	dinosaurs	injured	relatively	people
coincidence	atmosphere				
colliding	comets	Earth	millions	equivalent	
Complex damage	gravitational	Expecting	dangerous	small	
lucky	diameter				

It weighed about 10,000 tons, entered the atmosphere at a speed of 64,000 km/h and exploded over a city with a **blast** of 500 kilotons. But on 15 February 2013, we were 1..... . The meteorite that 2..... pieces of rock over Chelyabinsk, Russia, was relatively small, at only about 17 metres wide. Although many people were 3..... by falling glass, the damage was nothing compared to what had happened in Siberia nearly one hundred years ago. Another 4..... small object (approximately 50 metres in diameter) exploded in mid-air over a forest region, flattening about 80 million trees. If it had exploded over a city such as Moscow or London, 5..... of people would have been killed. By a strange 6....., the same day that the meteorite terrified the 7..... of Chelyabinsk, another 50m-wide asteroid passed relatively close to Earth. Scientists were 8.....that visit and know that the asteroid will return to fly close by us in 2046, but the Russian meteorite earlier in the day had been too 9..... for anyone to spot. Most scientists agree that 10.....and asteroids pose the 11..... natural threat to human existence. It was probably a large asteroid or comet 12..... with Earth which wiped out the 13.....about 65 million years ago. An enormous object, 10 to 16 km in diameter, struck the Yucatan region of Mexico with the force of 100 megatons. That is the 14..... of one Hiroshima bomb for every person alive on 15..... today. Many scientists, including the late Stephen Hawking, say that any comet or asteroid greater than 20 km in 16..... that hits Earth will result in the complete destruction of 17..... life, including all animals and most plants. As we have seen, even a much smaller asteroid can cause great 18..... The Earth has been kept fairly safe for the last 65 million years by good fortune and the massive 19..... field of the planet Jupiter. Our cosmic guardian, with its stable circular orbit far from the sun, sweeps up and scatters away most of the 20..... comets and asteroids which might cross Earth's orbit. After the Chelyabinsk meteorite, scientists are now monitoring potential hazards even more carefully but, as far as they know, there is no danger in the foreseeable future.

**Part B****(50 marks)**

suggested	if	careful	managed	flying	getting
must		accident	whether	sips	
in case	operating	forward	complicated	recover	hole

A surgeon flying from Hong Kong to London on a jumbo jet 1 ..... a fellow passenger's life by 2..... on her with a pair of scissors, a coat hanger, and a bottle of brandy. Pauline Dixon was involved in a motorcycle 3..... on the way to Hong Kong airport, but she didn't want to see a doctor 4..... she complained about a pain in her arm. The pilot asked 5..... or not there were any doctors on board, and Professor Wallace and Dr. Tom Wong came 6..... At first, they thought her arm was broken, but within minutes they saw that her condition was 7..... worse. They realized that one of her lungs 8..... have collapsed and was filling up with liquid. Professor Wallace said; " I felt we had 9..... operate as soon as we could, but of course we didn't have 10..... right equipment, so we had to see what was there. I cut a 11..... in her chest with a pair of scissors and then we had to find something to push a tube into the lung. One of the cabin crew 12..... using a coat hanger, which worked well, and we 13..... to get the tube in quite easily. Normally, it is not a 14..... operation 15..... you have the right equipment, but we had to be very 16..... . We sterilized everything with five star brandy. When the operation was over I had a few 17..... myself. I can tell you, I needed it."

After the plane landed safely in London, Miss Dixon went to hospital to 18..... Although, the operation had been very 19....., she was very grateful to the doctors for saving her life, and was full of 20.....for what they had done.

**Question 03****(100 marks)****Part A****(50 marks)****Put the verbs in the brackets into the correct tense.**

Sue Thomas is a fashion designer. She 1..... (to make) clothes ever since she 2..... (to be) a young girl. She 3..... (to get) her first job in a clothes factory when she was sixteen. She 4..... (to sew) buttons on to a shirt one day when she 5..... (to have) a brilliant idea for a design. After she spoke to her bank manager, she got a loan and she 6..... (to open) her own little workshop. Now she 7..... (to make) lots of money. Next year she 8..... (to open) a shop which will sell her own designs. She 9..... (to sell) clothes to a lot of famous people including film stars and singers and she 10..... (to think) she will be very rich soon.

**Part B**

**(50 marks)**

One day a little Indian boy 1..... (to sit) outside his wigwam. He 2..... (to wonder) how the Indians 3..... (to choose) their children's names. He 4..... (to decide) to go and ask the Indian chief. "Well," the chief 5..... (to explain), "we love nature and when a new baby 6..... (to be) born, we 7..... (to look) around and 8..... (to choose) a name like Flowing Waterfall, Bright Star, Running Bull. And so on. 9..... (you/to understand)? "Yes, chief", the Indian boy said. Why 10..... (you/to be) so interested in this, Two Dogs Fighting?", the chief asked.

**Question 04**

**(100 marks)**

**Re-write the sentences in reported speech.**

1. Don't do it!" (10 marks)  
She.....
2. "I'm leaving tomorrow" (10 marks)  
She.....
3. "Please get me a cup of tea" (10 marks)  
She.....
4. "She got married last year" (10 marks)  
She.....
5. "Be quick!" (10 marks)  
She.....
6. "Could you explain number four, please?" (10 marks)  
She.....
7. "Where do you live?" (10 marks)  
She.....
8. "We went to the cinema and then to a Chinese restaurant" (10 marks)  
She.....
9. "I'll come and help you at twelve" (10 marks)  
She.....
10. "What are you doing tomorrow?" (10 marks)  
She.....

**Question 05**

**(100 marks)**

**Part A**

**(50 marks)**

**Change the following sentences into passive voice.**

1. The government is planning a new road near my house. (5 marks)  
.....
2. My grandfather built this house in 1943. (5 marks)  
.....
3. Picasso was painting Guernica at that time. (5 marks)  
.....
4. The cleaner has cleaned the office. (5 marks)  
.....
5. He had written three books before 1897. (5 marks)  
.....
6. John will tell you later. (5 marks)  
.....
7. By this time tomorrow we will have signed the deal. (5 marks)  
.....
8. Somebody should do the work. (5 marks)  
.....
9. People speak Portuguese in Brazil. (5 marks)  
.....
10. The traffic might have delayed Jimmy. (5 marks)  
.....

**Part B**

**(50 marks)**

Fill the gaps with the correct tenses suitably. (active or passive voice)

1. The robbers ..... by the police yesterday. (arrest) (5 marks)
2. We ..... preparing for the examination now. (prepare) (5 marks)
3. It ..... since yesterday. (rain) (5 marks)
4. I ..... for five hours. (working) (5 marks)
5. The students ..... to submit the reports by Wednesday. (submit) (5 marks)
6. She ..... for a while. (lie) (5 marks)
7. The teacher ..... the students for lying. (punish) (5 marks)
8. The inmates of the juvenile home ..... well by the caretakers. (not/ treat) (5 marks)
9. As the patient could not walk, he ..... home in a wheelchair. (carry) (5 marks)

10. The injured ..... to the hospital in an ambulance. (take) (5 marks)

**Question 06**

**(100 marks)**

**Write an essay on:**

**Do you think Reading books can help people with personal development? Why or why not?**

**Give your reasons and provide examples.**

**Word limit 175 – 200**

**Important! – You will be penalized if you exceed the word limit.**





**Faculty of Health Sciences**  
**Bachelor of Science Honours in Biomedical Sciences**  
**BSM 1153 – Introduction to Biomedical Sciences**  
**1<sup>st</sup> Year 1<sup>st</sup> Semester**  
**Batch 05**  
**End Semester SEQ Examination**

INDEX NUMBER: .....

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Date : 27<sup>th</sup> of September 2021  
Time : 09.00 am – 12.00 pm (Three Hours) - To answer the questions  
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**QUESTION 01**

**(100 marks)**

1.1. Write short notes on the following.

- a) Double helical structure of DNA
- b) Structure of Chromosome

(25 marks)  
(25 marks)

1.2. Justify the role of RNA as a structural component of ribosomes to its functions.

(25 marks)

1.3. Discuss the importance of the specific structure of tRNA in relation to its function.

(25 marks)

**QUESTION 02**

**(100 marks)**

2.1. Mention three proposed methods for DNA replication and discuss about the accepted method of DNA replication.

(20 marks)

2.2. Draw a labelled diagram and describe the replication fork.

(20 marks)

2.3. Relate the functions of four enzymes in DNA replication.

(20 marks)

2.4. Relate the method of DNA replication in ensuring it's accuracy.

(20 marks)

2.5. Differentiate between replication and transcription.

(20 marks)

**QUESTION 03**

**(100 marks)**

Answer the given questions considering the below DNA sequence.

5' TACATATGCGAATGAATGGGAGCC 3'

3.1. Mention the bases of the complementary strand if the above sequence is the template strand.

(20 marks)

3.2. Mention the mRNA sequence that will be generated during the transcription of the above DNA sequence.

(25 marks)

3.3. Using the genetic code provided, determine the amino acid sequence coded by the above DNA sequence.

(25 marks)

		second letter				
		U	C	A	G	
first letter	U	UUU } Phe UUC } UUA } Leu UUG }	UCU } UCC } Ser UCA } UCG }	UAU } Tyr UAC } UAA stop UAG stop	UGU } Cys UGC } UGA stop UGG Trp	U C A G
	C	CUU } CUC } Leu CUA } CUG }	CCU } CCC } Pro CCA } CCG }	CAU } His CAC } CAA } Gln CAG }	CGU } CGC } Arg CGA } CGG }	U C A G
	A	AUU } AUC } Ile AUA } AUG Met	ACU } ACC } Thr ACA } ACG }	AAU } Asn AAC } AAA } Lys AAG }	AGU } Ser AGC } AGA } Arg AGG }	U C A G
	G	GUU } GUC } Val GUA } GUG }	GCU } GCC } Ala GCA } GCG }	GAU } Asp GAC } GAA } Glu GAG }	GGU } GGC } Gly GGA } GGG }	U C A G
						third letter

3.4. Imagine that instead of **A**, the 6<sup>th</sup> base was changed to **T** base due to a mutation. Discuss the effect of this on the amino acid sequence. (30 marks)

**QUESTION 04 (100 marks)**

- 4.1. Describe the importance of the interphase stage for the cell cycle. (25 marks)
- 4.2. Draw a diagram to denote the stages of mitosis and briefly describe those stages. (25 marks)
- 4.3. Relate the importance of meiosis in producing genetic variation. (25 marks)
- 4.4. Compare and contrast spermatogenesis and oogenesis processes. (25 marks)

**QUESTION 05 (100 marks)**

- 5.1. What is meant by Material Safety Data Sheet (MSDS)? Briefly state the importance. (20 marks)
- 5.2. Justify the importance of waste management in the Biomedical Sciences laboratory. (20 marks)
- 5.3. State the basic principle of the spectrophotometer. (20 marks)
- 5.4. Mention 4 applications of centrifugation. (20 marks)
- 5.5. State the importance of the autoclave. (20 marks)

**QUESTION 06 (100 marks)**

6.1. Answer the following questions using the chemical solutions provided in the table given below. (H= 1gmol<sup>-1</sup>, N=14gmol<sup>-1</sup>, Cl= 35.5gmol<sup>-1</sup>)

Solution Name	Concentration	Volume
Ammonium chloride solution	0.5M	500ml
Sodium chloride solution	0.2M	250ml
Hydrogen chloride solution	0.2M	200ml

- 6.1.1. Mention the detailed procedure of preparing the above sodium chloride solution. (25 marks)
- 6.1.2. You are assigned to prepare a working solution of 250ml of 0.1M NH<sub>4</sub>Cl solution. Write the standard laboratory procedure of preparing this working solution. (25 marks)
- 6.1.3. Determine the mass of the given hydrogen chloride solution. (density of HCl - 1.18g/ml) (20 marks)
- 6.2. A researcher conducted an experiment to extract DNA from a blood sample. Briefly describe the subsequent laboratory procedures that he could follow to confirm whether DNA has been extracted. (30 marks)



**Faculty of Health Sciences**  
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**BSM 1153– General Cosmeceutics**  
**Batch - 05**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End Semester SEQ Examination**

INDEX NUMBER: .....

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- **Upload the labelled PDF to LMS AND also email the PDF to [Fohs.exams@ciniec.edu](mailto:Fohs.exams@ciniec.edu)**

**Question 01****(100 marks)**

- 1.1 List three types of ingredients that are restricted in all types of cosmetic formulations. (15 marks)
- 1.2 What is the content of diethylene glycol in 100g of glycerin mixed with cosmetic formulation? (05 marks)
- 1.3 Describe the limitations on the inclusion of preservatives, UV absorbers and tar colours in the cosmeceutical preparations. (30 marks)
- 1.4 Write international standards that can be applied to enhance the competitiveness of the cosmetics industry. (20 marks)
- 1.5 Describe the manufacturing procedure of a vanishing cream. (30 marks)

**Question 02****(100 marks)**

- 2.1. What are the importance of GMP? (15 marks)
- 2.2. State different GMP guidelines found around the world. (10 marks)
- 2.3. Briefly describe the GMP requirements in location and surrounding, warehouses and quality control area. (15 marks)
- 2.4. Differentiate the quality assurance and quality control. (20 marks)
- 2.5. Describe any 05 basic principles of GMP. (40 marks)

**Question 03****(100 marks)**

- 3.1 What are the two types of connective tissue present in the dermis? (10 marks)
- 3.2 Discuss about one of these connective tissues mentioned in 2.1 (30 marks)
- 3.3 Briefly describe how botox are used in the Cosmetic industry (20 marks)
- 3.4 Discuss the anatomical features of the stratum spinosum layer (40 marks)

**Question 04****(100 marks)**

- 4.1 What is an excipient? (10 marks)
- 4.2 List three ideal properties of an excipient. (15 marks)
- 4.3 What are the functions of the coating agents? (10 marks)
- 4.4 Compare and contrast the three different types of humectants. (30 marks)
- 4.5 Describe the emollients used in the cosmaceutical industry. (35 marks)

**Question 05****(100 marks)**

- 5.1 List five barrier properties of packaging. (10 marks)
- 5.2 Briefly describe the primary packaging. (25 marks)
- 5.3 Write five ingredients used when manufacturing shampoo. (15 marks)
- 5.4 Briefly describe a cold cream. (20 marks)
- 5.5 Describe how the binders are important in the cosmeceutical formulations (30 marks)

**Question 06**

**(100 marks)**

- 6.1. State the uses of reference standards. (10 marks)
- 6.2. What is cosmaceutical layout? (15 marks)
- 6.2. Classify the reference standards according to the purity. (20 marks)
- 6.4. State 05 factors that would affect on manufacturing plant layout. (25 marks)
- 6.5. Describe the advantages and disadvantages of a Good Manufacturing Plant layout. (30 marks)



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**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End Semester SEQ Examination**

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- 01** **(100 marks)**
- 1.1. State the composition of effervescent tablets. (10 marks)
  - 1.2. Differentiate two phased system from single phase gels. (10 marks)
  - 1.3. Briefly describe the importance of powders as a dosage form. (15 marks)
  - 1.4. Emulsions and suspensions are categorized as dispersed systems. Illustrate this statement. (15 marks)
  - 1.5. Indicate the advantage/s of novel oral drug delivery technologies over typical oral dosage forms. (15 marks)
  - 1.6. Describe briefly on,
    - 1.6.1. Suppositories. (15 marks)
    - 1.6.2. Non-aqueous solutions. (20 marks)

- 02** **(100 marks)**
- 2.1. What are the importance of GMP? (15 marks)
  - 2.2. State different GMP guidelines found around the world. (10 marks)
  - 2.3. Briefly describe the GMP requirements in location and surrounding, warehouses and quality control area. (15 marks)
  - 2.4. Differentiate the quality assurance and quality control. (20 marks)
  - 2.5. Describe any 05 basic principles of GMP. (40 marks)

- 03** **(100 marks)**
- 3.1. Indicate 02 quality specification tests available in pharmacopoeia for medicines. (10 marks)
  - 3.2. Briefly describe the importance of pharmacopoeia. (20 marks)
  - 3.3. Differentiate pharmacopoeia and drug formulary. (20 marks)
  - 3.4. Drug can have either positive or negative effect while medicines impart only a positive medicinal effect on the patient. Comment on this statement. (15 marks)
  - 3.5. "Newly developed medicine must address a new need or should provide a significant added benefit over an existing medicine". Based on this statement, **state** the facts need to consider when introducing new medicines to the market. (15 marks)
  - 3.6. List out the requirements for unique facility design and operation for an injectable bio-drugs manufacturing facility. (20 marks)

- 04** **(100 marks)**
- 4.1. State 03 unique characteristic features of borosilicate glass. (15 marks)
  - 4.2. Briefly describe the advantage/s of device packaging. (15 marks)
  - 4.3. Indicate the importance of having proper closure system in primary packaging. (15 marks)
  - 4.4. Comment on the importance of quality assurance aspects of packaging. (20 marks)
  - 4.5. Write a descriptive account on blister packaging. (35 marks)



**05**

**(100 marks)**

- 5.1. Briefly describe the function of anti-oxidants as an excipient. (10 marks)
- 5.2. Compare and contrast glidants and lubricants aid in tablet manufacturing. (20 marks)
- 5.3. Comment on the functional role of excipients. (25 marks)
- 5.4. Differentiate the precautions and warnings available in a manufacturer label. (15 marks)
- 5.5. Outline the information should available in a dispensing label. (30 marks)

**06**

**(100 marks)**

- 6.1. State the uses of reference standards. (10 marks)
- 6.2. What is pharmaceutical layout? (15 marks)
- 6.2. Classify the reference standards according to the purity. (20 marks)
- 6.4. State 05 factors that would affect on manufacturing plant layout. (25 marks)
- 6.5. Describe the advantages and disadvantages of a Good Manufacturing Plant layout. (30 marks)



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**Bachelor of Science Honours in Cosmetic Science**

**BSM 1143 – General Mathematics**

**1<sup>st</sup> Year 1<sup>st</sup> Semester**

**Batch 05**

**End Semester SEQ Examination**

**INDEX NUMBER:** .....

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**Date :** 24<sup>th</sup> of September 2021

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**Question 1****(100 marks)**

1. Factorize the given expressions.

- i.  $x^2 + 7x + 12$  (25 marks)
- ii.  $x^2 - 20x + 100$  (25 marks)
- iii.  $x^2 - 49$  (25 marks)
- iv.  $6x^2 + x - 12$  (25 marks)

**Question 2****(100 marks)**

- 2.1. Solve  $x^2 - 40x - 6000 = 0$  (50 marks)
- 2.2. Use the quadratic formula to solve  $3x^2 - 6x + 2 = 0$  (50 marks)

**Question 3****(100 marks)**

- 3.1. How many terms are there in the sequence 11, 15, 19,....., 643 ? (50 marks)
- 3.2. Find the sum of the first 100 terms of the progression  $1, 1\frac{1}{4}, 1\frac{1}{2}, 1\frac{3}{4}, \dots$  (50 marks)

**Question 4****(100 marks)**

- 4.1. Standard equations of the geometric progression  $T_n = ar^{n-1}$ ,  $S_n = \frac{a(r^n-1)}{(r-1)}$
- 4.1.1. Find the 7<sup>th</sup> term in the geometric sequence 8, 24, 72, 216, .... (50 marks)
- 4.1.2. The first 3 terms of an infinite geometric progression are 16, 12 and 9
  - (a) Write down the common ratio. (25 marks)
  - (b) Find the sum of the terms of the progression. (25 marks)

**Question 5****(100 marks)**

- 5.1. Differentiate  $f(x) = \frac{(x^2+1)(x-5)}{x}$  (50 marks)
- 5.2. Given that  $y = \sqrt{x} - \frac{8}{x^2}$ , find
  - (a)  $\frac{dy}{dx}$  (25 marks)
  - (b) The gradient of the curve at the point  $(4, 1\frac{1}{2})$  (25 marks)

**Question 6****(100 marks)**

6.1. Prove the identity  $\cos^2 x - \sin^2 x = 2 \cos^2 x - 1$  (50 marks)

6.2. Prove the identity  $\frac{\cos x}{1 - \sin x} - \frac{1}{\cos x} = \tan x$  (50 marks)

**Question 7****(100 marks)**

7.1. Find  $\int (2x^3 - 3x + 4) dx$  (50 marks)

7.2. Find  $\int \left( \frac{3}{x^4} - \frac{1}{x^2} + 4 \right) dx$  (50 marks)

**Question 8****(100 marks)**

8.1. Evaluate  $\int_0^2 \frac{1}{5x+3} dx$  (50 marks)

8.2. Evaluate  $\int_5^7 \frac{1}{4-x} dx$  (50 marks)



**Faculty of Health Sciences**

**Bachelor of Science Honours in Biomedical Sciences/  
Bachelor of Science Honours in Industrial Pharmaceutical Sciences/  
Bachelor of Science Honours in Cosmetic Science**

**BSM 1113 – Information Technology**

**1<sup>st</sup> Year 1<sup>st</sup> Semester**

**Batch 05**

**End Semester SEQ Examination**

**INDEX NUMBER: .....**

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**Date : 21<sup>st</sup> of September 2021**

**Time : 09.00 am – 12.00 pm (Three Hours) - To answer the questions**

**12.00 pm – 12.30 pm (30 minutes) - To upload & email the compiled answer script**

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **EIGHT** questions.
- Answer **SIX** questions including the **Compulsory question**. (Compulsory question and FIVE other questions)
- The paper will be for three hours (9.00 am – 12.00 pm). You will be given an extra 30 minutes for submission.
- You should write **answers in lined papers** legibly in black or blue ink.
- You **MUST** write **your index number in the top right corner** of each answer script.
- **Answer script should be numbered** (right bottom) clearly.
- Photograph of your answer scripts must be taken by keeping them on a clear platform (e.g. table).
- Arrange the photographs of your answer script in a word document in an orderly manner, then convert the word document to a **PDF** or use CAMScanner to directly convert it to PDF.
- **Label the PDF: Your Index No – Information Technology SEQ**
- **Upload the labelled PDF to LMS AND also email the PDF to [Fohs.exams@cinec.edu](mailto:Fohs.exams@cinec.edu)**

**QUESTION 01 (Compulsory)****(100 marks)**

- (a) List four (04) sectors that use ICT and explain them briefly. (80 marks)  
 (b) Describe the difference between Intranet and Extranet. (20 marks)

**QUESTION 02****(100 marks)**

- (a) Write four (04) uses of internet and explain two (02) of them. (25 marks)  
 (b) Write five (05) features in email. (25 marks)  
 (c) Explain the difference between “cc” and “bcc”. (25 marks)  
 (d) What are the types of worms and write four (04) ways of protecting your computer from viruses? (25 marks)

**QUESTION 03****(100 marks)**

- (a) Define the terms “Hardware and Software” with examples? (20 marks)  
 (b) What is EULA? Explain briefly? (20 marks)  
 (c) What is the file compression? Briefly explain the importance of the file compression. (20 marks)  
 (d) Write four (04) major functions of an OS. (20 marks)  
 (e) Write two (02) types of user interfaces and explain one. (20 marks)

**QUESTION 04****(100 marks)**

Following figure shows the income and expenditure of the sports meet of ABC College,

F11						
590000						
	A	B	C	D	E	F
1	<b>Sport Meet Income and Expenditure</b>					
2	<b>Income</b>			<b>Expenditure</b>		
3	Date	Discription	Amount	Date	Discription	Amount
4	1/2/2016	Claude House	55000	1/20/2016	For Food	50000
5	1/2/2016	Mark House	45000	1/21/2016	drinks	50000
6	1/4/2016	Luke House	52000	1/23/2016	Medals and Cups	20000
7	1/6/2016	Cammilus House	48000	1/26/2016	Certificates	15000
8	1/7/2016	Well wissers	100000	1/27/2016	Transport	10000
9	1/8/2016	Students from abroad	290000	1/28/2016	Main Stage	15000
10				1/31/2016	Balance B/F	430000
11	<b>Total</b>		590000			590000
12	Old students living in abroad		\$2,000.00			
13	Doller exchange rate		145			
14						
15						

- (a) What is the formula that should be in cell C9 to convert the amount in dollar in C12 to rupee?  
(Dollar exchange rate is mentioned in cell C13) (10 marks)
- (b) Write the formula in cell C11 to calculate total income. (20 marks)
- (c) Total income in C11 should be equal to the amount in F11. What is the formula should be in F11 to fulfill this requirement? (10 marks)
- (d) Total expenditure and the total balance Brought forward (B/F) should be equal to the amount in F11. Write the formula that should be in cell F10 to calculate the balance. (20 marks)
- (e) You can see the column letter F and row number are shaded. Why is that? (10 marks)
- (f) Amount given from Mark house needs to be change to 50000. What are the cells would be change accordingly? (10 marks)
- (g) Sports committee want to show how do they expend money for each task in graphically.  
I. Name two types of graph that can be used to do this. (10 marks)  
II. State the cell range should be used for above graph. (10 marks)

**QUESTION 05**

**(100 marks)**

- (a) List three (03) difficulties of handling large volume of data in an organization. (20 marks)
- (b) What is a database? Briefly explain how you would overcome the difficulties mentioned above by using databases. (30 marks)
- (c) What do you mean by a "Field" & a "Record" in a database system? (10 marks)
- (d) Define the terms "Primary Key" & "Foreign Key" in database environment. (20 marks)
- (e) List three (03) types of relationships exist between database tables. (20 marks)

**QUESTION 06**

**(100 marks)**

- (a) What is the difference between a "Printer" and a "Plotter"? (25 marks)
- (b) How is a "Network Computer" different from a "Laptop"? (45 marks)
- (c) "Shared Folder" is a useful element towards students in an Information Technology Lab Environment. Explain how it is useful (30 marks)

**QUESTION 07**

**(100 marks)**

- (a) Define the term "Computer Virus". (25 Marks)
- (b) List down how you can identify that your computer has been attacked by a virus? (25 Marks)
- (c) Explain why the viruses are dangerous. (25 Marks)
- (d) Name three different types of computer viruses and explain one from them. (25 Marks)

**QUESTION 08**

**(100 marks)**

Write short notes on the following

**(5 X 20 Marks)**

- (a) WWW
- (b) CPU
- (c) Database
- (d) Input devices
- (e) ICT





**Faculty of Health Sciences**

**Bachelor of Science Honours in Biomedical Sciences**

**BSM 1153– Introduction to Biomedical Sciences**

**Batch - 04**

**1<sup>st</sup> year 1<sup>st</sup> semester**

**End semester SEQ Examination**

**INDEX NUMBER:** .....

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**Date** : 13<sup>th</sup> of January 2021  
**Time** : 9.00 a.m. – 11.00 a.m. (Two Hours) - To answer the Questions  
11. 00 a.m. -11.30 a.m (30 minutes) - To upload & email the compiled answer script

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **FOUR** questions.
- Answer **ALL** questions.
- The paper will be for 2 hours (9.00 a.m. - 11.00 a.m.). You will be given an extra 30 minutes for submission. Any submission after 11.30 a.m. will not be accepted.
- You should **write answers in foolscap sheets** legibly in black or blue ink.
- You **MUST** write your **index number in the top right corner** of each answer script.
- **Answer script** should be numbered (right bottom) clearly.
- Photograph of your answer scripts must be taken by keeping them on a clear platform (e.g. table).
- Arrange the photographs of your answer script in a word document in an orderly manner, then convert the word document to a PDF.
- **Label the PDF: Your Index No- Introduction to Biomedical Sciences.**
- **Upload** the labelled **PDF to LMS AND** also **email** the PDF to [Fohs.exams@cinec.edu](mailto:Fohs.exams@cinec.edu)

01

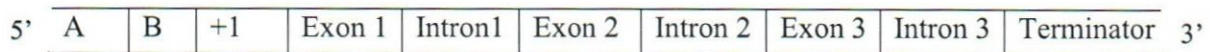
(100 marks)

- 1.1. Relate the functions of five enzymes in DNA replication. (25 marks)
- 1.2. Briefly describe how DNA replication ensure accuracy. (25 marks)
- 1.3. Justify the role of RNA as a structural component of ribosomes. (25 marks)
- 1.4. Justify the importance of the specific structure of mRNA in relation to its function. (25 marks)

02

(100 marks)

- 2.1. What is a replication fork? describe using a labelled diagram. (20 marks)
- 2.2. Compare the differences between DNA replication and transcription. (10 marks)
- 2.3. Given below is a eukaryotic transcription unit. Answer the following question, based on the given figure.



- 2.3.1. Identify, A and B. State the nucleotide sequence of these regions. (20 marks)
- 2.3.2. What are exons and introns? (10 marks)
- 2.3.3. Construct the mature mRNA that could result from the above primary transcript. (30 marks)
- 2.3.4. Discuss the role of spliceosome in producing mature mRNA from primary transcript. (10 marks)

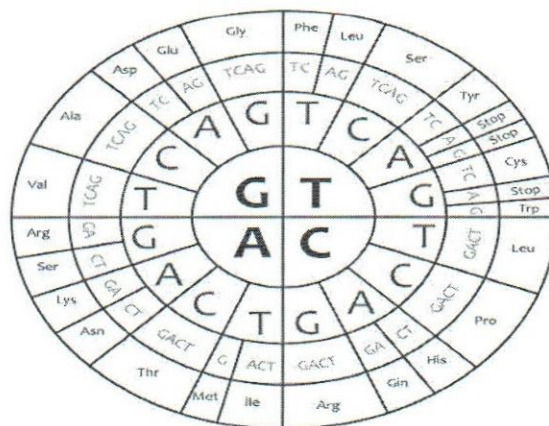
03

(100 marks)

The following DNA sequence occurs in the coding region of a gene.

5' AATGAATGGGAGCCTGAAGGA 3'

- 3.1. If the above sequence shows the bases of the template strand, what would be the sequence of complementary strand? (20 marks)
- 3.2. Transcribe the above DNA sequence to a mRNA sequence. (25 marks)
- 3.3. Using the genetic code provided, determine the amino acid sequence coded by the above DNA sequence (25 marks)



3.4. If the 4<sup>th</sup> base of the above DNA sequence was deleted by a mutation, how would the amino acid sequence be changed? (30 marks)

**04**

**(100 marks)**

4.1. Draw a diagram to denote the stages of mitosis and briefly describe those stages. (30 marks)

4.2. Relate the importance of meiosis in producing genetic variation. (25 marks)

4.3. Differentiate between extraction of DNA using manual method and using DNA extraction kits. (20 marks)

4.4. A researcher conducted an experiment to extract DNA from a blood sample. Briefly describe the subsequent laboratory procedures that he could follow after extraction to confirm whether DNA has been extracted. (25 marks)



**Faculty of Health Sciences**  
**Bachelor of Science Honours in Industrial Pharmaceutical Sciences**  
**BSM 1153 - General Pharmaceutics**  
**Batch - 04**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End Semester SEQ Examination**

**INDEX NUMBER:** .....

---

**Date** : 13<sup>th</sup> January 2021  
**Time** : 09.00 am – 12.00 pm (Three Hours)

---

**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

**01** (100 marks)

- 1.1. Classify the dosage forms according to the route of drug administration. (10 marks)
- 1.2. Differentiate buccal and sublingual tablets. (10 marks)
- 1.3. State **03** (Three) uses of plasters. (15 marks)
- 1.4. Draw the schematic representation of the cumulative amount of drug released from immediate, extended and delayed-release tablets. (15 marks)
- 1.5. State **05** (Five) types of novel and advanced dosage forms, delivery systems and devices. (15 marks)
- 1.6. Describe the following.
  - a). Pharmaceutical inserts (15 marks)
  - b). Dispersed systems (20 marks)

**02** (100 marks)

- 2.1. List down the **05** (Five) basic principles of Good Manufacturing Practices. (20 marks)
- 2.2. Briefly describe the basic requirements of the quality control area of a pharmaceutical manufacturing area. (25 marks)
- 2.3. What are the importance of GMP? (20 marks)
- 2.4. Discuss the common problems in GMP execution. (25 marks)
- 2.5. Compare and contrast Quality Assurance and Quality Control. (10 marks)

**03** (100 marks)

- 3.1. State the phases of drug development. (10 marks)
- 3.2. Differentiate general monographs and specific monographs. (20 marks)
- 3.3. Define the following.
  - a). Standards (10 marks)
  - b). Quality specifications (10 marks)
- 3.4. Write a descriptive account on clean room technology. (50 marks)

**04** (100 marks)

- 4.1. Write down **05** (Five) ideal requirements of packaging. (20 marks)
- 4.2. State **03** (Three) advantages of device packaging. (15 marks)
- 4.3. Comment on the quality assurance aspect of packaging. (15 marks)
- 4.4. Write short notes on following.
  - a). Type I– Borosilicate glass (15 marks)
  - b). Pharmaceutical closures (15 marks)
  - c). Strip package (20 marks)

**05**

**(100 marks)**

- 5.1. Classify the excipients based on their origin by giving **02** (Two) examples per each. (20 marks)
- 5.2. State **05** (Five) functional roles of excipients. (15 marks)
- 5.3. Define the following types of excipients.
- a). Disintegrants (10 marks)
  - b). Glidants (10 marks)
  - c). Preservatives (10 marks)
- 5.4. State **05** (Five) advantages of a proper dispensing label. (15 marks)
- 5.5. Draw a typical dispensing label including the most important information should contain on it. (20 marks)

**06**

**(100 marks)**

- 6.1. What is a pharmaceutical reference standard? (10 marks)
- 6.2. What are the uses of reference standards? (15 marks)
- 6.3. State the types of reference standards and briefly mention it's characteristics. (30 marks)
- 6.4. List down the components included in a certificate of analysis of reference standards. (10 marks)
- 6.5. What are the advantages of a properly designed manufacturing plant layout? (25 marks)
- 6.6. State the factors influencing manufacturing plant layout design. (10 marks)



**Faculty of Health Sciences**  
**BMS 1113- Information Technology**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**Batch 04**  
**End semester SEQ Examination**

INDEX NUMBER: .....

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Date : 08/01/2021  
Time : 9.00 am- 12.00 pm (3 hours)

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of 8 questions.
- Including the compulsory question answer for 6 questions (Compulsory Question+ Another 5 questions)
- You should **write answers in foolscap sheets** legibly in black or blue ink.
- You **MUST** write your **index number in the top right corner** of each answer script.
- **Answer script** should be numbered (right bottom) clearly.
- Photograph of your answer scripts must be taken by keeping them on a clear platform (e.g. table).
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- **Label the PDF: Your Index No – Information Technology SEQ.**
- **Upload** the labelled **PDF to LMS AND** also **email** the PDF to [Fohs.exams@cinec.edu](mailto:Fohs.exams@cinec.edu)

### Question 01 (Compulsory)

- (a) List and briefly describe four (04) sectors in which ICT is used. (80 Marks)  
 (b) Describe the difference between intranet and extranet. (20 Marks)

### Question 02

- (a) Write four (04) uses of internet and explain two (02) of them. (25 Marks)  
 (b) Write five (05) features in email. (25 Marks)  
 (c) Explain the difference between “cc” and “bcc” in an email. (25 Marks)  
 (d) What are the types of worms and write four (04) ways of protecting your computer from viruses (25 Marks)

### Question 03

- (a) Define the terms “Hardware and Software” with examples. (20 Marks)  
 (b) What is EULA? Explain briefly. (20 Marks)  
 (c) What is the file compression? Briefly describe the importance of the file compression. (20 Marks)  
 (d) Write four (04) major functions of an OS. (20 Marks)  
 (e) Write two (02) types of user interfaces and explain one. (20 Marks)

### Question 04

Following figure shows the income and expenditure of the sports meet of ABC College,

F11 : 590000						
	A	B	C	D	E	F
1	<b>Sport Meet Income and Expenditure</b>					
2	<b>Income</b>			<b>Expenditure</b>		
3	Date	Discription	Amount	Date	Discription	Amount
4	1/2/2016	Claude House	55000	1/20/2016	For Food	50000
5	1/2/2016	Mark House	45000	1/21/2016	drinks	50000
6	1/4/2016	Luke House	52000	1/23/2016	Medals and Cups	20000
7	1/6/2016	Cammilus House	48000	1/26/2016	Certificates	15000
8	1/7/2016	Well wissers	100000	1/27/2016	Transport	10000
9	1/8/2016	Students from abroad	290000	1/28/2016	Main Stage	15000
10				1/31/2016	Balance B/F	430000
11	<b>Total</b>		590000			590000
12	Old students living in abroad		\$2,000.00			
13	Doller exchange rate		145			
14						
15						

- (a) What is the formula that should be in cell C9 to convert the amount in dollar in C12 to rupee? (Dollar exchange rate is mentioned in cell C13) (10 Marks)  
 (b) Write the formula in cell C11 to calculate total income. (20 Marks)





**Faculty of Health Sciences**  
**BSM 1143 – General Mathematics**  
**Batch - 04**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End semester SEQ Examination**

INDEX NUMBER: .....

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Date : 07/01/2021  
Time : 9.00 a.m. – 12.00 noon (3 hours)

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **8** questions.
- Answer **6** questions.
- You should **write answers in foolscap sheets** legibly in black or blue ink.
- You **MUST** write your **index number in the top right corner** of each answer script.
- **Answer script** should be numbered (right bottom) clearly.
- Photograph of your answer scripts must be taken by keeping them on a clear platform (e.g. table).
- Arrange the photographs of your answer script in a word document in an orderly manner, then convert the word document to a PDF.
- **Label the PDF: Your Index No – General Mathematics SEQ.**
- **Upload** the labelled **PDF to LMS AND** also **email** the PDF to [Fohs.exams@cinec.edu](mailto:Fohs.exams@cinec.edu)

**Question 01****(50 marks × 2 = 100 marks)**

- (a) Given that  $y = \frac{1+\sin x}{\cos x}$  find  $\frac{dy}{dx}$  using the quotient rule.  
 (b) Differentiate  $y = 3e^{x+1}$

**Question 02****(50 marks × 2 = 100 marks)**

- (a) Find  $\int (2x^3 - 3x + 4) dx$   
 (b) Find  $\int \left( \frac{3}{x^4} - \frac{1}{x^2} + 4 \right) dx$

**Question 03****(50 marks × 2 = 100 marks)**

- (a) Find the points on the curve with equation  $y = x^3 + 6x^2 + 5$  where the value of the gradient is  $-9$ .  
 (b) Find the equation of the tangent to the curve  $y = x^2 + 3x + 2$  at the point  $(2, 12)$

**Question 04****(50 marks × 2 = 100 marks)**

- (a) Prove the identity  $\cos^2 x - \sin^2 x = 2 \cos^2 x - 1$   
 (b) Prove the identity  $\frac{\cos x}{1-\sin x} - \frac{1}{\cos x} = \tan x$

**Question 05****(50 marks × 2 = 100 marks)**

Standard equations of the geometric progression  $T_n = ar^{n-1}$ ,  $S_n = \frac{a(r^n-1)}{(r-1)}$

The first term of a geometric sequence is 5 and the fifth term is 1280.

- (a) Find the common ratio of the geometric sequence.  
 (b) Find the 8<sup>th</sup> term of the sequence.

**Question 06****(50 marks × 2 = 100 marks)**

- (a) Evaluate  $\int_0^2 \frac{1}{5x+3} dx$                       (b) Evaluate  $\int_5^7 \frac{1}{4-x} dx$

**Question 07****(50 marks × 2 = 100 marks)**

- (a) Solve  $x^2 + 30x - 1000 = 0$   
 (b) Use the quadratic formula to solve  $5x^2 + 4x - 3 = 0$

**Question 08****(25marks × 4 = 100 marks)**

Factorize the given expressions

- (a)  $x^2 + 7x + 12$                       (b)  $x^2 - 20x + 100$   
 (c)  $x^2 - 49$                               (d)  $6x^2 + x - 12$



**Faculty of Health Sciences**  
**BSM 1163 – General English**  
**Batch - 04**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End Semester SEQ Examination**

INDEX NUMBER: .....

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Date : 06/01/2021  
Time : 01.30 pm – 04.30 pm (3 hours)

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **06** questions.
- Answer **all** questions.
- You should **write answers in foolscap sheets** legibly in black or blue ink.
- You **MUST** write your **index number in the top right corner** of each answer script.
- **Answer script** should be numbered (right bottom) clearly.
- Photograph of your answer scripts must be taken by keeping them on a clear platform (e.g. table).
- Arrange the photographs of your answer script in a word document in an orderly manner, then convert the word document to a PDF.
- **Label the PDF: Your Index No – General English SEQ.**
- **Upload** the labelled **PDF to LMS AND** also **email** the PDF to [Fohs.exams@cinec.edu](mailto:Fohs.exams@cinec.edu)

**Question 01****(20 Marks)****Read the passage and answer the questions given below.****Use the space given: do not answer the questions in a separate paper.**

1. Pollution is an environmental concern for people throughout the world. One university study suggests that pollutants in the water, air, and soil cause up to 40% of the premature deaths in the world's population. The majority of these deaths occur in developing countries.
2. Water in many developing countries is contaminated with toxic chemicals, also known as toxins. The World Health Organization (WHO) estimates that 1.1 billion people have little or no access to clean water. In many of these regions the water that is used for drinking, cooking, and washing is the same water that is used for dumping sewage and hazardous waste. Most developing countries cannot afford water treatment facilities. Approximately 80% of infectious diseases in the world are caused by contaminated water.
3. Air pollution is a growing problem throughout the world. Indoor air pollution is one of the leading causes of lung cancer. Families in developing countries use open stoves for cooking and heating their homes. These homes do not have proper ventilation. The smoke, which is full of chemicals and carcinogens, gets trapped inside where families eat and sleep. Outdoor pollution also causes disease and illness, especially in industrial cities such as Beijing, China, where cancer is the leading cause of death. China relies heavily on coal, which is considered the dirtiest source of energy. According to the European Union, only 1% of urban dwellers in China breathe clean air on an average day. Neighbouring countries including Japan and Korea receive much of China's pollution in the form of acid rain. This pollution results mainly from the coal powered factories, which produce inexpensive goods for North American and European consumers. Outdoor air pollution is also a concern in many wealthy countries. Those who live and work in urban centres such as Los Angeles or Toronto experience many warm days beneath a layer of smog.
4. Soil pollution is also a major concern, both in industrial and developing countries. Pollutants such as metals and pesticides seep into the earth's soil and contaminate the food supply. Soil pollution causes major health risks to entire ecosystems. This type of pollution reduces the amount of land suitable for agricultural production and contributes to global food shortages. Dumping of industrial and domestic waste products produces much of the world's soil pollution, though natural disasters can also add to the problem. In wealthy countries such as the US, protection agencies monitor the food supply. The public is generally warned before major disease outbreaks occur. Developing countries do not have this luxury. Farmers in poor nations grow food in contaminated soil both to earn a living and to avoid starvation.
5. As more people move to urban centres, premature deaths caused by pollution are expected to increase worldwide. Today, the developed nations who achieved their wealth at the

expense of the environment will be held accountable for protecting the earth's resources for future generations.

1. What are the three types of environmental pollution discussed in the passage? **(1 mark)**

- I. ....
- II. ....
- III. ....

2. Why has the author mentioned that pollution is an environmental concern? Support your answer referring to the passage. **(2 marks)**

.....  
.....  
.....  
.....  
.....

3. What is the author's main purpose of writing this article? **(2 marks)**

.....  
.....  
.....  
.....

4. What are the two types of air pollution mentioned in the text? **(1 mark)**

- I. ....
- II. ....

5. How does air pollution take place in Sri Lanka? Support your answer with examples. **(2 marks)**

.....  
.....  
.....  
.....  
.....  
.....

6. Does soil pollution lead to starving? Support your answer referring to the text. **(2 marks)**

.....  
.....  
.....

.....  
.....

7. According to your point of view, as a developing country is Sri Lanka trying to minimize environmental pollution? Support your answer by giving reasons you have experienced. (Word count 100) **(4 marks)**

.....  
.....  
.....  
.....  
.....  
.....  
.....  
.....

8. What is the main idea of the following paragraphs? **(1 marks)**

.....  
.....  
.....

9. Do you agree with the author's statement that, developed nations will be held accountable for protecting the earth's resources for future generations? If yes, why? **(3 marks)**

.....  
.....  
.....  
.....  
.....  
.....  
.....

10. Provide a suitable title for this passage. **(2 marks)**

.....

Question 02

Part A

(10 marks)

Fill in the blanks with the words given below in the box. (The first one has been done for you).

regard	political	confinement	critic	poetry
writing	oppressive	awarded	existence	dramatist
acceptance	literary	distinguished	Literature	
imprisonment	released	government	won	experiences
cultural				South

Wole Soyinka, who was born in 1934, is a Nigerian writer, poet and playwright. Many 1) regard him as Africa's most 2)..... playwright. He 3)..... the Nobel Prize for Literature in 1986, the first African writer to win this honour.

Soyinka has played an active role in Nigeria's 4)..... history. In 1967, during the Civil War in Nigeria, he was arrested by the Federal Government and put in solitary 5)..... for attempting to broker a peace between the warring parties. While in prison he wrote 6)..... which was published in a collection. He was 7)..... two years later after international attention was drawn to his 8)..... His 9).....in prison are recounted in a book. He is an outspoken 10)..... of many Nigerian administrations, and of political tyrannies worldwide, including the Mugabe regime in Zimbabwe. Much of his 11)..... has been concerned with "the 12)..... boot and the irrelevance of the colour of the foot that wears it".

1986 was his most glorious year and occurred during the reigns of several violent and repressive African regimes. The Swedish Academy 13)..... him the Nobel Prize for 14).....as a writer "who in a wide 15)..... perspective and with poetic overtones fashions the drama of 16).....". The foremost Nigerian 17)..... became the first African Nobel laureate, enshrined forever in the history of world literature. His Nobel Lecture was devoted to South African freedom-fighter Nelson Mandela. Soyinka's 18)..... speech criticised apartheid and the politics of racial segregation imposed on the population by the Nationalist 19)..... African 20)..... That year brought him another 21)..... award - the Agip Prize for Literature - and he was awarded a Nigerian national decoration: Commander of the Federal Republic.

**Part B**

**(10 marks)**

buy moment with enough off nail  
noticeably able else disabled myself  
awkward looking the doghouse and  
fence trouser reached down advertising

A farmer had some puppies to sell. He painted a sign 1)..... the four pups and set about nailing it to the post on the edge of his yard. As he was driving the last 2)..... into the post, he felt a tug on his overalls. He looked down into the eyes of a little boy. "Mister," he said, "I want to 3)..... one of your puppies."

"Well," said the farmer, as he rubbed his sweat 4)..... to the back of his neck. "These puppies come from fine parents and cost a good deal of money."

The boy dropped his head for a 5)..... Then reaching deep into his pocket, he pulled out a handful of change and held it up to 6)..... farmer.

"I've got thirty-nine cents. Is that 7)..... to take a look?" "Sure", said the farmer. And with that he led out a whistle. "Here, Dolly!" he called. Out from the 8)..... and down the ramp ran Dolly forward by four little pups. The little boy's eyes danced 9)..... delight. As the dogs made their way upto the 10)....., the little boy noticed something 11)..... stirring inside the doghouse. Slowly another little pup appeared, this one 12)..... smaller. Down the ramp it slid. Then in a somewhat 13)..... manner, the little pup began hobbling toward the others, doing its best to catch up.

"I want that one.", the little boy said, pointing to the 14)..... pup. The farmer knell 15)..... at the boy's side and said, "Son, he will never be 16)..... to run and play with you like the other pups."

With that the little boy stepped back from the fence, reached down, and began rolling up one leg of his 17)..... and revealed a steel brace running down both sides of his leg attached to a specially made shoe, 18)..... back up at the farmer, he said, "You see sir, I too don't run well 19)..... and he will need someone who understands."

With tears in his eyes, the farmer 20)..... down and picked up the little pup. Holding it carefully, he handed it to the little boy. "How much?" asked the little boy. "No charge," answered the farmer. "There's no charge for love."



**Question 03**

**Part A**

**(10 marks)**

**Put the verbs in the brackets into the correct tense.**

The school fair 1)..... (to be) right around the corner, and tickets have just gone on sale. We 2)..... (to sell) a limited number of tickets at a discount, so move fast and 3)..... (to get) yours while they are still available. This is going to be an event you 4)..... (not /to want) to miss! First off, the school fair is a great value when compared with other forms of entertainment. Also, your ticket purchase 5)..... (to help) our school, and when you help the school, it 6)..... (to help) the entire community. But that's not all! Every ticket you purchase 7)..... (to enter) you in a drawing to win fabulous prizes. And 8)..... (not/ to forget), you will have mountains of fun because there 9)..... (to be) acres and acres of great rides, fun games, and entertaining attractions! 10)..... (to spend) time with your family and friends at our school fair. Buy your tickets now!

**Part B**

**(10 marks)**

I 1)..... (to do) well in school, and people think I 2)..... (to be) smart because of it. But it's not true. In fact, three years ago I 3)..... (to struggle) in school. However, two years ago I decided to get serious about school and made a few changes. First, I 4)..... (to decide) I would become interested in whatever was being taught, regardless of what other people 5)..... (to think). I also decided I would work hard every day and never 6)..... (to give up) on any assignment. I decided to never, never fall behind. Finally, I decided to make school a priority over friends and fun. After implementing these changes, I 7)..... (to become) an active participant in classroom discussions. Then my test scores began to rise. I still 8)..... (to remember) the first time that someone made fun of me because "I was smart." How exciting! It 9)..... (to seem) to me that being smart is simply a matter of working hard and being interested. After all, learning a new video game is hard work even when you are interested. Unfortunately, learning a new video game 10)..... (not/to help) you get into college or get a good job.

**Question 04**

**(10 marks)**

**Re-write the sentences in reported speech.**

1. He said, "I like this song."  
.....
2. "Where is your sister?" she asked me.  
.....
3. "I don't speak Italian," she said.  
.....
4. "Say hello to Jim," they said.  
.....
5. "The film began at seven o'clock," he said.  
.....
6. "Don't play on the grass, boys," she said.  
.....
7. "Where have you spent your money?" she asked him.  
.....
8. "I never make mistakes," he said.  
.....
9. "Does she know Robert?" he wanted to know.  
.....
10. "Don't try this at home," the stuntman told the audience.  
.....

**Question 05**

**Part A**

**(10 marks)**

**Change the following sentences into passive voice.**

1. John collects money.  
.....
2. Anna opened the window.  
.....
3. We have done our homework.  
.....

4. I will ask a question.  
.....
5. He can cut out the picture.  
.....
6. The sheep ate a lot.  
.....
7. We do not clean our rooms.  
.....
8. William will not repair the car.  
.....
9. Did Sue draw this circle?  
.....
10. Could you feed the dog?  
.....

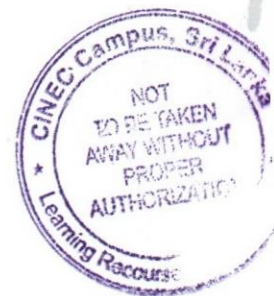
**Part B**

**(10 marks)**

Fill the gaps with the correct tenses suitably. (active or passive voice)

1. The words ..... by the teacher today. (*explain*)
2. We ..... a letter the day before yesterday. (*send*)
3. This car ..... It's too old. (*not/ steal - will-future*)
4. This street ..... because of snow. (*already/ close - Present Perfect*)
5. A new restaurant ..... next week. (*open*)
6. He ..... to the party yesterday. (*invite*)
7. The blue box ..... (*can/not/ see*)
8. I ..... the book by my friend last Sunday. (*give*)
9. The dishes ..... by my little brother. (*not/ wash - Present Perfect*)
10. I ..... by Robert. (*not/ ask - will-future*)





**Faculty of Health Sciences**  
**Bachelor of Science Honours in Biomedical Sciences**  
**BSM1153– Introduction to Biomedical Sciences**  
**Batch - 03**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End semester SEQ Examination**

INDEX NUMBER: .....

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Date : 25<sup>th</sup> August 2020  
Time : 09.00 a.m. – 12.00 p.m.

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

**QUESTION 01****(100 marks)**

- 1.1. Briefly describe how DNA replication ensure accuracy. (20 marks)
- 1.2. Compare the DNA and RNA polymerases. (20 marks)
- 1.3. Describe the role of different enzymes in DNA replication. (20 marks)
- 1.4. Briefly describe in detail how DNA is arranged to fit inside an eukaryotic cell nucleus. (40 marks)

**QUESTION 02****(100 marks)**

Write short notes on following.

- 2.1. Prokaryotic promoters. (15 marks)
- 2.2. Rho dependent termination. (15 marks)
- 2.3. Open reading frame. (20 marks)
- 2.4. 30s initiation complex. (20 marks)
- 2.5. Wobble hypothesis. (30 marks)

**QUESTION 03****(100 marks)**

- 3.1. Differentiate the composition of eukaryotic and prokaryotic ribosomes. (15 marks)
- 3.2. Mention the importance of the specific structure of tRNA in relation to its function. (20 marks)
- 3.3. Describe how mRNA is modified in eukaryotes. (30 marks)
- 3.4. Briefly describe elongation stage in prokaryotic protein biosynthesis. (35 marks)

**QUESTION 04****(100 marks)**

- 4.1. State ten key skills that are required for a professional Biomedical Scientist. (15 marks)
- 4.2. What is meant by Material Safety Data Sheet (MSDS)? Briefly state the importance. (20 marks)
- 4.3. State basic principle of the autoclave. (20 marks)
- 4.4. Write four applications of the centrifugation. (20 marks)
- 4.5. Differentiate between fixed angle and swinging out rotor types. (25 marks)

**QUESTION 05****(100 marks)**

- 5.1. Mention 4 advantages of preparing a master mix when carrying out PCR. (20 marks)
- 5.2. List the safety precautions you take when performing gel electrophoresis. (20 marks)
- 5.3. You are assigned to prepare a working solution of 250ml of 0.1M  $\text{NH}_4\text{Cl}$  solution from a stock solution of 0.5M  $\text{NH}_4\text{Cl}$  solution. Write the standard laboratory procedure of preparing this working solution. (H= 1 $\text{g mol}^{-1}$ , N=14 $\text{g mol}^{-1}$ , Cl= 35.5 $\text{g mol}^{-1}$ ) (25 marks)
- 5.4. A researcher conducted an experiment to extract DNA from a blood sample. Briefly describe the subsequent laboratory procedures that he could follow to confirm whether DNA has been extracted. (35 marks)

**QUESTION 06****(100 marks)**

- 6.1. Discuss in detail the importance of the interphase stage for the cell cycle. (25 marks)
- 6.2. Mention the main order of stages which takes place during metaphase of mitosis. (20 marks)
- 6.3. Write the importance of meiosis in producing recombinant genes. (25 marks)
- 6.4. Compare and contrast spermatogenesis and oogenesis processes. (30 marks)



**Faculty of Health Sciences**  
**Bachelor of Science Honours in Industrial Pharmaceutical Sciences**  
**BSM 1153 - General Pharmaceutics**  
**Batch - 03**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End Semester SEQ Examination**

**INDEX NUMBER:** .....

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**Date** : 25<sup>th</sup> August 2020  
**Time** : 09.00 am – 12.00 pm (Three Hours)

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.



**QUESTION 01** (100 marks)

- 1.1. Define the term “**Standards**”. (10 marks)
- 1.2. State **05** (Five) types of drugs. (10 marks)
- 1.3. Pharmacopoeia is an official publication containing a list of medicinal drugs with their effects and directions for their use.
- 1.3.1. State **04** (Four) world renowned pharmacopoeias. (10 marks)
- 1.3.2. Differentiate General Monographs and Specific Monographs. (20 marks)
- 1.4. Environmentally controlled areas are important to be considered when manufacturing sterile biopharmaceuticals.
- 1.4.1. Define “**Clean Room**” considering biological drug manufacturing facility. (10 marks)
- 1.4.2. Briefly describe the structure and the function of HEPA filters in related to clean room technology. (15 marks)
- 1.4.3. Write a descriptive account on **categories** involving in documentation process of biopharmaceutical product manufacturing. (25 marks)

**QUESTION 02** (100 marks)

- 2.1. What is meant by GMP? (20 marks)
- 2.2. Briefly explain the importance of GMP. (25 marks)
- 2.3. Briefly differentiate Quality Control and Quality Assurance. (20 marks)
- 2.4. Write down **05** (Five) basic principles of GMP. (10 marks)
- 2.5. Briefly explain the common problems in GMP execution. (25 marks)

**QUESTION 03** (100 marks)

- 3.1. Define “**Powder**” dosage form. (10 marks)
- 3.2. Differentiate buccal and sublingual tablets. (10 marks)
- 3.3. Briefly describe **02** (Two) types of non- aqueous solutions. (15 marks)
- 3.4. State **03** (Three) uses of plasters. (15 marks)
- 3.5. Classify novel dosage forms and drug delivery technologies. (20 marks)
- 3.6. Write a descriptive account on semi-solid dosage forms. (30 marks)

**QUESTION 04** (100 marks)

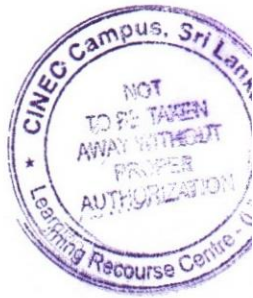
- 4.1. Write down **05** (Five) functions of packaging. (20 marks)
- 4.2. State **03** (Three) disadvantages of glass. (15 marks)
- 4.3. State **03** (Three) types of hazards encountered by package by giving **02** (Two) examples per each. (15 marks)
- 4.4. Write a detailed account on “blister packaging”. (50 marks)

**QUESTION 05** (100 marks)

- 5.1. Different types of pharmaceutical excipients are used in the manufacturing process of pharmaceutical dosage forms.
- 5.1.1. State **04** (Four) ideal characteristics of an excipient. (10 marks)
- 5.1.2. State **05** (Five) functional roles of excipients. (15 marks)
- 5.1.3. Classify the “excipients based on their origin” by giving **02** (Two) examples per each. (20 marks)
- 5.1.4. Define the following types of excipients. (15 marks)
- a). Anti-adherents
  - b). Lubricants
  - c). Glidants
- 5.2. State the criteria to be fulfilled by a manufacturer or dispensing label. (10 marks)
- 5.3. State **05** (Five) advantages of a proper dispensing label. (15 marks)
- 5.4. Describe **05** (Five) legal requirements of a manufacturer label. (15 marks)

**QUESTION 06** (100 marks)

- 6.1. What does pharmaceutical plant layout refer to? (10 marks)
- 6.2. What are the proper storage conditions of reference standards? (15 marks)
- 6.3. Differentiate Qualitative and Quantitative analysis. (20 marks)
- 6.4. Briefly describe the advantages of a good pharmaceutical plant layout. (25 marks)
- 6.5. Write a short note on following. (30 marks)
- a). Employees’ needs and safety
  - b). Plant environment/climate



**Faculty of Health Sciences**  
**Bachelor of Science Honours in Industrial Pharmaceutical Sciences**

**BSM 1153 General Pharmaceutics**  
**1<sup>st</sup> year 1<sup>st</sup> semester**

**End Semester SEQ Examination**

*Batch 02*

**INDEX NUMBER:** .....

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**Date** : 06<sup>th</sup> July 2020  
**Time** : 09.00 am – 12.00 pm (Three Hours)

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

**QUESTION 01**

**(100 marks)**

1.1. Pharmacopoeia is an official publication containing a list of medicinal drugs with their effects and directions for their use.

1.1.1. Define Pharmacopoeia. (10 marks)

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.....

1.1.2. State the purposes of having Pharmacopoeia. (20 marks)

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1.1.3. Briefly describe the difference between General Monographs and Specific Monographs. (20 marks)

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1.2. Differentiate the “Drug” and the “Medicine”. (10 marks)

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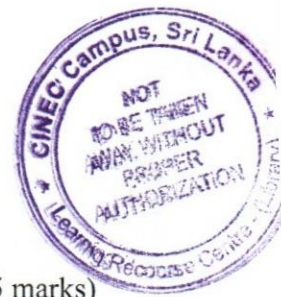
**QUESTION 02** **(100 marks)**

2.1. State the **03** (Three) types of possibilities of pharmaceutical contaminations. (15 marks)

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.....

2.2. What are the factors to be considered when designing of pharmaceutical production area in a manufacturing plant? (20 marks)

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2.3. Briefly describe the importance of a good pharmaceutical manufacturing layout.

(25 marks)

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2.4. Describe the important requirements of the premises of a good pharmaceutical manufacturing facility pertaining to good manufacturing practices (GMP) of the world health organization.

(40 marks)

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**QUESTION 03**

**(100 marks)**

3.1. Define the term "Dosage form".

(05 marks)

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.....

3.2. State the chemical composition of effervescent tablets.

(10 marks)

.....

3.3. State **04** (Four) types of ointment bases.

(10 marks)

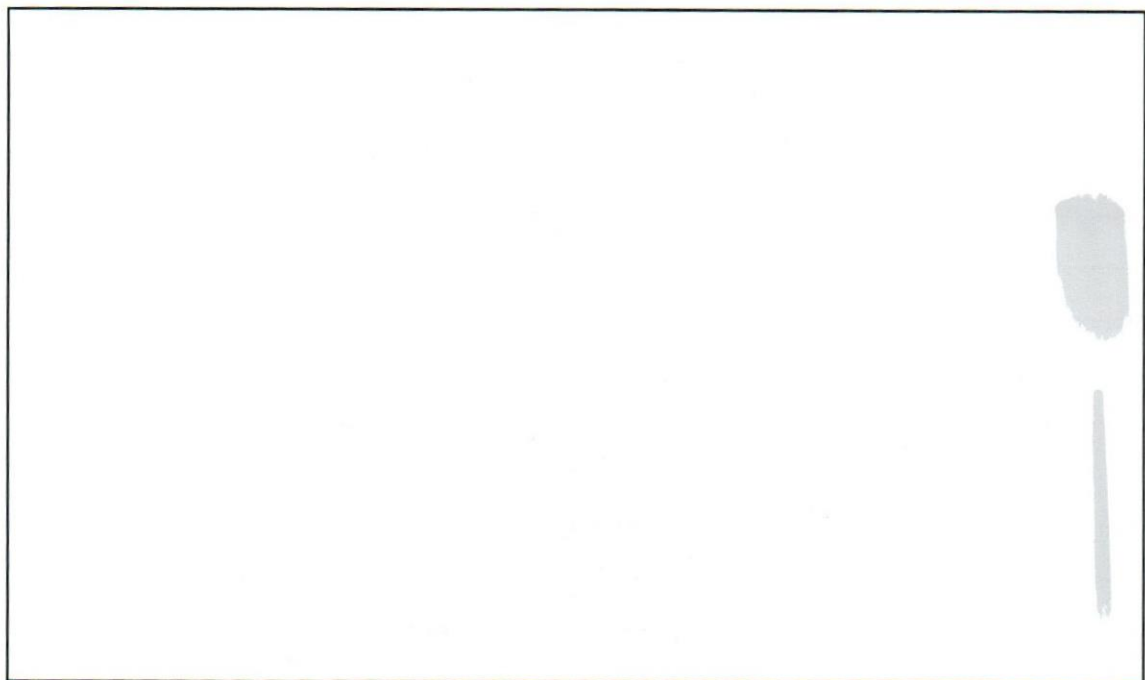
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3.4. Mention **04** (Four) examples for Bulk powders.

(10 marks)

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.....  
.....

3.5. Draw the schematic representation of the cumulative amount of drug released from immediate, extended and delayed-release tablets. (15 marks)







A series of 28 horizontal dotted lines for writing.

**QUESTION 04**

**(100 marks)**

4.1. The packaging is the science, art and technology of enclosing or protecting products for distribution, storage, sale and use.

4.1.1. Write down **05** (Five) selection criteria for packaging. (20 marks)

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.....  
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.....  
.....

4.1.2. State **03** (Three) advantages of “Device packaging”. (15 marks)

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.....

4.2. Briefly explain the importance of having proper closure system for containers. (15 marks)

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4.3. Write a detailed account on “types of glasses” including examples when necessary. (50 marks)

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A series of horizontal dotted lines for writing.

**QUESTION 05**

**(100 marks)**

5.1. Pharmaceutical excipients are playing a wide role in the manufacturing process of different types of dosage forms.

5.1.1. Define “Pharmaceutical Excipients”. (10 marks)

.....  
.....  
.....  
.....

5.1.2. Classify the “excipients based on their origin” by giving **02** (Two) examples per each. (20 marks)

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.....  
.....

5.1.3. State **05** (Five) ideal properties of preservatives used in pharmaceutical manufacturing. (15 marks)

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5.1.4. Define the following types of excipients. (15 marks)

a) Antioxidants

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.....  
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.....



b) Anti-adherents

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.....

c) Disintegrants

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5.2. State **05** (Five) legal requirements of a manufacturer label. (10 marks)

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5.3. State **02** (Two) advantages of the proper dispensing label. (10 marks)

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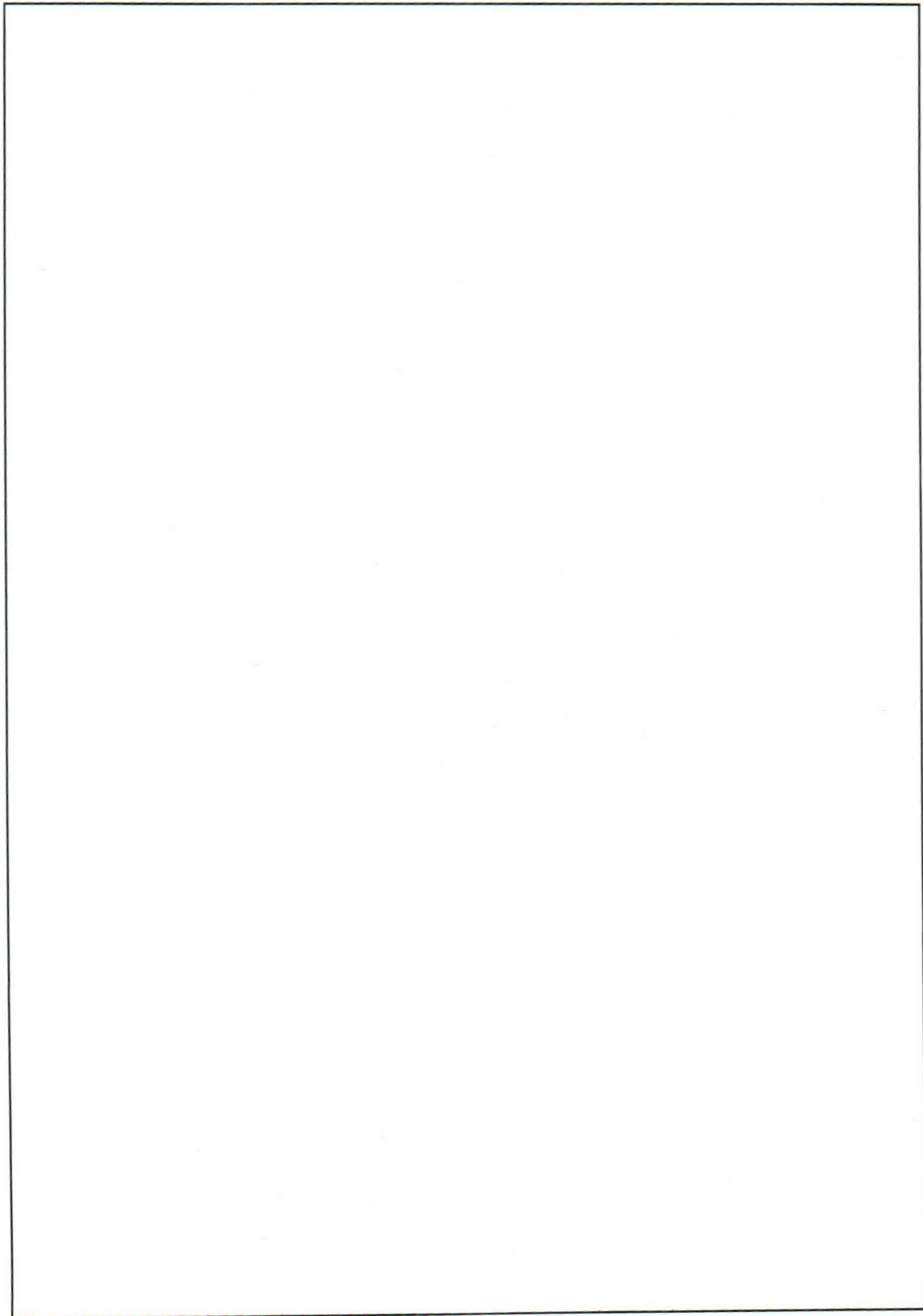
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5.4. Draw a dispensing label and mention the most important information should contain on it.

(20 marks)

A large, empty rectangular box with a thin black border, intended for drawing a dispensing label. The box is oriented vertically and occupies most of the page's width and height.

**QUESTION 06**

**(100 marks)**

6.1. List the components included in a certificate of analysis of a reference standard. (10 marks)

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6.2. What are the basic requirements of quality of the reference standards? (20 marks)

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6.3. Briefly describe the uses of reference standards. (30 marks)

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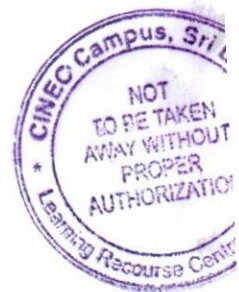
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**Faculty of Health Sciences**  
**Bachelor of Science Honours in Biomedical Sciences**  
**BSM1153– Introduction to Biomedical Sciences**  
**1<sup>st</sup> year 1<sup>st</sup> semester**  
**End semester SEQ Examination**

**INDEX NUMBER:** .....

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**Date** : 06.07.2020  
**Time** : 09.00 am – 12.00 pm

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**INSTRUCTIONS TO CANDIDATES**

- This question paper consists of 06 questions.
- Answer **all** questions.
- You should write legibly in black or blue ink.
- You are not allowed to take out the examination papers.

**QUESTION 01**

**(100 marks)**

1.1. Briefly define the following.

A. Genetic code.

**(20 marks)**

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B. Antiparallel nature of DNA.

**(20 marks)**

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C. Anticodon.

**(20 marks)**

.....

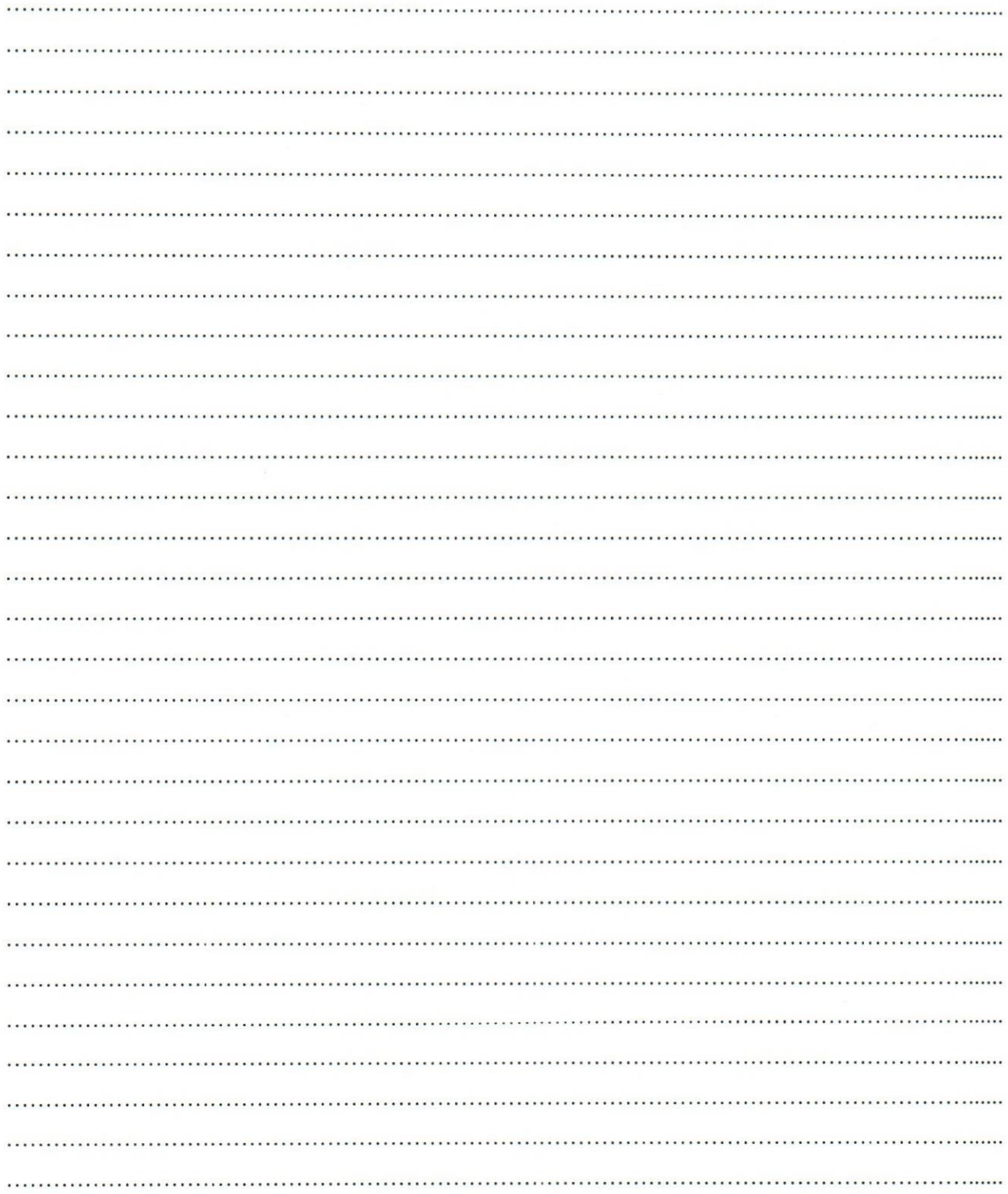
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**QUESTION 03**

**(100 marks)**

Following is a hypothetical fragment of eukaryotic DNA.

5' TACCATGGCCATGCTAAAGACTTGATT 3'

3' ATGGTACCGGTACGATTTCTGAACTAA 5'

3.1. Illustrate using a diagram, how the eukaryotic cell would replicate the above segment of DNA. Mark the following in the diagram. (30 marks)

- a) Directionality
- b) Leading/lagging strand
- c) Okazaki fragments

3.2. List out all enzymes involve in this process. (10 marks)

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3.3. Draw the fragments of DNA sequence received by each daughter cell.

(10 marks)

3.4. Draw the codon-anticodon interaction correspond to this sequence.

(25 marks)









A series of 25 horizontal dotted lines for writing.



