2014

BMLT

6th Semester Paramedical Examination

COMPUTER APPLICATION INCLUDING MS-OFFICE

PAPER—XVII (Unit-34)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. (a) Perform the following Para in MS-Word using the justified format :

   <u>*Neutrophils :*</u>

   These are the most numerous white blood cells with diameter of $10-15\mu$ (RBC 7.2μ) and constitute 60–70% of the total leucocyte count. Nucleus shows variable number of lobes (2–7) and hence called polymorphonuclear leucocytes. The pink cytoplasm shows fine violet (red-brown) granules, which are

   (Turn Over)

amphophilic, i.e., take both acidic and basic stain and the granules are not neutral. The granules of neutrophils are of two types — Primary and Secondary. Only the Secondary granules are seen in Leishman's stain. Nucleus stains purple blue and the chromatin is coarse and ropy.

(b) Save the above para in a MS-Word file with Header & Footer. The header should contain the word 'BMLT' on the extreme left and your Roll-number on the extreme right. The footer should contain the page number at the middle.

(c) Create a folder named BMLT + "Roll No" and save the file created as per (b) in the folder.   5+(2+2)+1

2. Prepare the following table in the MS-Word and Save in the folder created earlier :   10

Region	Material Mortality			
	No. of deaths		Rate per 1,00,000 live births	
	1983	1988	1983	1988
Developing Countries	464	504	430	326
Africa	160	150	669	640
Asia	308	310	420	380
Latin America	34	25	270	380
Europe	2	1	27	200
Oceania	2	1	300	23
Developed Countries	6	4	30	26

3. (a) Create the following task in MS-Excel Worksheet and calculate the Mean and Standard Deviation of each column of parameters :   5+5

Sl. No.	Male Patients	Diastolic BP (mm of Hg)	Female Patients	Diastolic BP (mm of Hg)
1	Mainak Chakraborty	83	Mousona Maji	75
2	Pralay Chakraborty	75	Suparna Boyal	72
3	Sourav Mondal	72	Poulomi Guria	78
4	Saikat Maity	81	Ashmita Dey	84
5	Nakul Samanta	74	Sirsha Basu	91
6	Chandan Mali	69	Bela Roy	79

(b) Make a Vertical bar diagram showing BP (Diastolic) & Mean (BP) for male patients (*Data will be provided by the examiner*).

4. Laboratory Note Book.   10

5. Viva-Voce.   10

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2014

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION TECHNIQUE

PAPER—XVI (Unit–32)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. (a) Write the principle of ECG recording.

   (b) Why ECG recording depends on different kinds of lead-system used ? Clarify with examples.

   (c) Calculate the frequency and time-interval of PQR complexes of above ECG recording (provided) and interpret your results.

   $3+(2+2)+3$

2. (a) Submit a training note book on magnetic blood flow meter.

   (b) Write the basic technique of A-Scan biometry.

   (c) Classify different types of ecocardiogram.

   $5+2\frac{1}{2}+2\frac{1}{2}$

3. (a) Write the diagnostic use of CT Scan.

   (b) What are the advantages of CT Scan over traditional radiography ?

   $5+5$

4. Laboratory Note Book.

   10

5. Viva Voce.

   10

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2007

BMLT

6th Semester Paramedical Examination

COMPUTER APPLICATION INCLUDING MS-OFFICE

PAPER—XVII (Unit-33)

Full Marks : 35

Time : 2 hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Question No. *1* and
any *three* questions from the rest.

1. Answer any *five* of the following :   5×1

   (a) Convert $(17)_{10}$ to equivalent binary number system.

   (b) Name two input and output devices used in computer.

   (c) Name one low and two high level languages.

   (d) What is the use of 'Java' language ?

   (e) What is POST ?

   (f) Define Cache memory.

   (g) What is pen drive ?

   (h) What is the normal capacity of hard disk in a typical desktop PC ?

   (i) Which type of documents can be prepared by using MS Excel ?

(Turn Over)

2. (a) State the main differences between MS Word and MS Excel.

   (b) What is the difference between a Program and a Software ?

   (c) What are DMP and Line Printer ?

   (d) State the differences between RAM and ROM.

   (f) What are the special features of a super computer ?

                                                                     2+2+2+2+2

3. (a) State briefly the different generations of computer.

   (b) Draw the logical BLOCK diagram of a digital computer system. State the function of each of the units of the Block diagram.   5+(2+3)

4. (a) Design a typical data base for recording and storing data in a pathological Laboratory.

   (b) Give step by step approach to prepare at least one table of the data base using MS Access.   7+3

5. (a) What is software ? Classify softwares used in computer sytem. State the differences between System software and Application software with example.

   (b) Write the application 'Cross +' package in a computer.   (2+2+3)+3

6. (a) What is multimedia system ?

   (b) What are the emerging applications of multimedia in general and in health care system ?   2+(4+4)

8. Write short notes on : $2\frac{1}{2} \times 4$

   (a) Compiler and Interpreter ;

   (b) Single-user OS and Multi-user OS ;

   (c) Primary Memory and Secondary Memory ;

   (d) Micro computer and Super computer.

4. (a) What is the utility of SIGMA Ploter software ?

(b) What are basic functional units of a computer systems ? State the function of each of the unit with the logical block diagram. 2 + (3 + 5)

5. (a) What are the different categories of software ? Clearly discuss the system Software and Application Software.

(b) Operating system works as an 'Interpretor'. Justify the statement. 5 + 5

6. (a) What is DBMS ? State the differences between DBMS and FBMS.

(b) What are the applications of computers in a pathological laboratory ? (2 + 3) + 5

7. (a) Design a typical database for recording and storing data in a pathological laboratory.

(b) Write the applications of SPSS package in a computer.

8 + 2

8. Write the differences : 5 × 2

(a) Primary memory and Secondary memory.

(b) Single user O/S and multi

9. (a) What do you mean by Digital representation of Text and Image ?

(b) Give a model method of preparing bar diagram using MS-Excel.

4 + 6

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2008

BMLT

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COMPUTER APPLICATION

PAPER—XVII (Unit-33)

Full Marks : 35

Time : 2 Hours

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. 1 and any *three* from the rest.

1. Answer any *five* of the following :   5×1

   (a) What is ALU ?

   (b) What is www ?

   (c) What is UPS ?

   (d) What is the extension name of ms-Excel file ?

   (e) What is the use of 'C++' Language ?

   (f) Name one multiuser operating system.

   (g) What is the normal capacity of Hard-disk drive in a typical Desktop PC ?

2. (a) State the main differences between RAM and ROM.

   (b) State the main differences between Primary memory and Secondary memory.

   (c) What is 'EEPROM' ?   4+4+2

3. (a) Draw the logical block diagram of a digital computer system.

   (b) Clearly specify the functions of each of the unity of diagram.

   (c) What is Numbering System?   4+4+2

4. (a) What is the function of Operating System?

   (b) State the main difference between Single-user Operating and Multi-user Operating System.

   (c) Name one single-user Operating System.

   (d) What is DOS?   4+4+1+1

5. (a) What is software?

   (b) Classify software used in computer system.

   (c) State the differences between System Software and Application Software with example.

   (d) Name one low and two high level languages.   2+3+3+2

6. (a) What is computer?

   (b) What are the characteristics of a computer?

   (c) What are the basic difference between Digital and Analog Computer System.   2+4+4

7. Write short notes on : $2\frac{1}{2} \times 4$

   (a) Hard Disk Drive ;

   (b) Key board ;

   (c) Virus ;

   (d) Mouse.

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2009

BMLT

6th Semester Paramedical Examination

COMPUTER APPLICATION

PAPER—XVII (Unit-33)

Full Marks : 35

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. 1 and any *three* from the rest.

1. Answer any *five* of the following :   5×1

   (a) What is pixel ?

   (b) Define cell in MS Excel.

   (c) $(25 \cdot 75)_{10} = (?)_2$

   (d) What is the difference between $5\frac{1}{4}''$ and $3\frac{1}{2}''$ floppy disk ?

   (e) What languages actually understood by the computer ?

   (f) What is the normal capacity of RAM in a typical Desktop PC.

   (g) What is EPROM ?

   (h) What do you mean by peripheral ?

2. (a) What is Multimedia System?

(b) What are the various component of a Multimedia System?

(c) Highlights the uses of Multimedia System in Modern Health Care System.   2+2+6

3. (a) What is Memory?

(b) State the differences between Primary Memory and Secondary Memory.

(c) Define various Memories in a memory hierarchy of a computer.   2+4+4

4. (a) What is database?

(b) State the difference between DBMS & FBMS.

(c) Design a database for a pathological laboratory which will maintain patients, doctors and test detail in a typical health care system.   2+3+5

5. (a) What is the differences between programme and software?

(b) What are the various functional unit of a computer system? Draw the logical block diagram. Specify the function of ALU, CU and RAM of the diagram.
                                                          2+(4+4)

6. (a) What is operating system?

(b) How is the operating system works as a 'Resource Manager' and 'Interpreter'?

(c) State the difference between GUI based OS and CUI based OS.

7. Write short notes on : $2\frac{1}{2} \times 4$

(a) Impact printer and Non-impact printer ;

(b) Traditional mouse and Optical mouse ;

(c) MS Excel and MS Access ;

(d) Secondary Storage devices.

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BMLT/VI/CAMSO/XVII/U-33/06

2006

COMPUTER APPLICATION INCLUDING MS OFFICE

PAPER—XVII, (Unit-33)

Full Marks : 50

Time : 2 hours

Answer **Q.No.1** and any **four** from the rest

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. Answer any *five* :   2 × 5

   (*a*) What is DMP ?

   (*b*) Name one input device and one output device used in computer.

   (*c*) What is DATA BUS ?

   (*d*) What is 'resolution' and 'pixel' ?

   (*e*) What is the difference between RAM and ROM ?

(*Turn Over*)

(f) State two differences between data and Information.

(g) In patient maintaince of a health care system, which type of data storing is suitable— FBMS or DBMS and Why?

(h) What are 'Input devices' and 'Output devices'?

(i) Which languages are actually read by a computer?

2. (a) What are the component software inside the MS OFFICE Package?

(b) Write down the procedure for copying a file from 'C:\ My documents' to a Floppy.

(c) State the main difference between MS-word and MS-Excel.

(d) What is 'cell' and 'worksheet' in MS-Excel?

(e) State the types of Application where 'MS-Excel' and 'MS-Access' is used. $2 + 2 + 2 + 2 + 2$

3. (a) What is multimedia system?

(b) What are emerging applications of multimedia system in general and in Health care system? $2 + (4 + 4)$

2014

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION TECHNIQUE

PAPER—XVI (Unit–32)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. (a) How is an ECG performed of your friends as per lead provided.

   (b) Calculate the amplitude and time interval of QRS complexes of above ECG recording and interpret your results.

   (c) Write the principle of ECG recording ?   7+(3+2)+3

2. (a) Submit a training note book on CAT scanners.

   (b) Write the mechanism of 3D image formation from ultrasound during CT scan.

   5+5

3. (a) Write the basic principle of magnetic blood flow meter during blood flow measurement.

   (b) What are the risks and side-effects of ultrasound measurement.

   $2+(1\frac{1}{2}+1\frac{1}{2})$

4. Laboratory Note Book.   10

5. Viva-Voce.   10

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2007

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION

PAPER—XVI (Unit–32)

(PRACTICAL)

Full Marks : 50

Time : 4 hours

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

1. (a) Identify the different leads and demonstrate the configuration.

   (b) Record the ECG of the subject provided.

   (c) Comment on your findings of P-wave, T-wave and ST segment.　　　　　　　　　3+7+5

2. (a) Record blood pressure in supine and standing position.

   (b) Describe the procedure in short.

   (c) Interpret the results and calculate the pulse pressure in each case.　　　　　　4+3+3

(Turn Over)

3. (a) Enumerate the different scanning techniques.

   (b) Describe the principle of CAT Scan. $2\frac{1}{2}+2\frac{1}{2}$

4. Laboratory Note Book. 10

5. Viva Voce. 10

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2008

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION TECHNIQUE

PAPER—XVI (Unit–32)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. (a) Measure the blood pressure of the subject provided in supine, sitting and standing conditions and present the data in tabular form.

   (b) Interpret the results. 7+3

2. (a) Demonstrate the recording of ECG of the subjects as per leads provided.

   (b) Compute R–T interval & S–T interval from your electrocardiogram.

   (c) Calculate the heart rate from the ECG.

   $9+1\frac{1}{2}+1\frac{1}{2}+3$

(Turn Over)

3. (a) Enumerate the different scanning technique.

   (b) Describe the principle of CAT Scan. $2\frac{1}{2}+2\frac{1}{2}$

4. Laboratory Note Book.   10

5. Viva Voce.   10

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2009

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION TECHNIQUE

PAPER—XVI (Unit–32)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. (a) Demonstrate the recording of ECG of the subjects as per lead provided.

   (b) Compute the amplitude and time interval of 'P' wave and 'R' wave from your electrocardiogram.

   (c) Calculate the heart rate from the ECG.

   8+4+3

2. (a) Measure the blood pressure of the subject provid. J in supine, sitting and standing conditions and present the data in tabular form.

   (b) Interpret the results. 6+3

3. (a) Write the procedure of USG technique with block diagram.

   (b) Write the procedure of Dialysis. 3+3

4. Laboratory Note Book. 10

5. Viva Voce. 10

2009

BMLT

6th Semester Paramedical Examination

COMPUTER APPLICATION INCLUDING MS-OFFICE

PAPER—XVII (Unit–34)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

1. (a) Type the following text and save the above text in a MS Word file with Header & Footer. The header should contain the word "BMLT" on the extreme left and Your Roll Number on the extreme right. The footer should contain the Page Number at the right.

    Notebook is becoming popular in the micro-computer. The notebook comes with 16MB EDO RAM and 1.3GB HDD and can be extended to 144 MB and 2.5GB respectively. It has a 3.5" floppy drive, with an optional 5.25" drive. The notebook has an active matrix TFT colour 12.1" screen with a resolution of 800 × 600 with 16.7 million colours. There is a built in sound blaster pro compatible sound card with internal stereo speakers and mono microphone. Security conscious users will be happy to note the inclusion of a Kensington cable lock port. **5**

    (b) Convert the entire file to three columns, each of some width, with alignment justified and lines in between.
    5

(c) Create a folder named BMLT+ "Roll No." and save the file created as per (a) in the folder. $2\frac{1}{2}$

(d) Copy the folder in CD in presence of the examiner. $2\frac{1}{2}$

2. (a) Create the database in MS Excel Worksheet and save it in the name PATIENT.XLS : 5

	A	B	C	D	E	F	G	H
1		KASTURBA MEDICAL HOSPITAL						
2	PATIENT	DEPT	WARD	ADMI	DISC	ROOM RENT	FEES	TOTAL AMOUNT (in Rs.)
3	KAJOL	SKIN	SPEC	1-JAN-09	10-JAN-09		20,000	
4	SUNNY	EAR	GEN	3-MAR-09	6-MAN-09		15,000	
5	SHARUKH	SKIN	SPEC	2-JAN-09	3-FEB-09		20,000	
6	AKSHAY	SKIN	SPEC	5-FEB-09	10-FEB-09		12,000	
7	MADHURI	ENT	GEN	7-JAN-09	14-JAN-09		18,000	

(b) Calculate the room rent based on the MS-Excel Mathematical format (Spec = 125, GEN = 100). 5

(c) Sort the database in the ascending order of FEES. $2\frac{1}{2}$

(d) Using Data Form, delete the record of SHARUKH. $2\frac{1}{2}$

(e) Laboratory Note Book. 10

(f) Viva Voce.

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2011

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION TECHNIQUE

PAPER—XVI (Unit–32)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. (a) Demonstrate the recording of ECG of the subjects as per lead provided.

   (b) Calculate the heart rate from the ECG tracing.

   (c) Compute the P–R interval, Q–T interval & R–R interval from your tracing.

   6+3+(2+2+2)

(Turn Over)

2. (a) Measure the blood pressure of given subject in different posture & represent the data in tubular form.

   (b) Interpret the results.   6+3

3. (a) Write the steps followed during USG imaging of abdomen.

   (b) Write the procedure of Scanning methods.   3+3

4. Laboratory Note Book.

                                                              10

5. Viva-Voce.

                                                              10

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2011

BMLT

6th Semester Paramedical Examination

COMPUTER APPLICATION INCLUDING MS-OFFICE

PAPER—XVII (Unit–34)

(PRACTICAL)

Full Marks : 50

Time : 4 Hours

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. **Perform the following task :**

(a) Type the following para in MS-WORD using the justified format :

India's atomic scientists and technologists are world class. They have developed nuclear energy capacities despite heavy odds. But there are handicaps which have adversely affected our atomic energy programme.

(Turn Over)

We have inadequate production of uranium. The quality of our uranium sources is not comparable to those of other producers. Many countries have imposed sanctions on trade with India in nuclear materials, nuclear equipment and nuclear technology. As a result, our nuclear energy programme has suffered.

The nuclear agreement that we are negotiating with developed countries will end India's nuclear isolation. It will open up new opportunities for trade in dual-use high technologies and nuclear materials and equipment, opening up new pathways to accelerate industrialization of our country. It will enable us to provide electricity to meet the needs of our farmers, our artisans, our traders and our industry.   4

(b) Save the above para in MS-WORD file with Header and Footer. The Header should contain the word 'BMLT – 6th Semester' on the extreme left and your roll number on the extreme right. The Footer should contain the page number at the middle.   2

(c) Create a folder named BMLT + 'Roll No.' and save the file created as per (b) in CD or Pen drive in the presence of the examiner.   2

(d) Print the above matter and submit it to the examiner. 2

2. Prepare the following table in MS-WORD and save in the folder created earlier. Print it with your roll no. :   5

REGION	IMMUNIZATION			
	Immunization taken		Immunization not taken	
	2010	2011	2010	2011
Garbeta	4,576	5,116	6,766	2,078
Saiboni	3,767	4,215	5,077	1,593
Chandrakona	3,987	4,157	4,837	2,001
Midnapore	9,783	11,513	7,559	6,738

3. (a) Create the following task in MS-EXCEL worksheet and calculate the Average and Standard deviation of each column of parameters :

Sl. No.	Male Patient	Fasting Glucose (mg/dl)	Female Patient	Fasting Glucose (mg/dl)
1.	Umesh Yadav	76	Sudipta Sarma	69
2.	Goutam Gambhir	79	Silpa Nandi	73
3.	Rahul Sharma	92	Priyanka Jana	88
4.	Suresh Raina	89	Suchiparna Kar	76
5.	Manoj Tiwari	113	Nabamita Ghosh	103
6.	Pragyan Ojha	120	Debalina Maity	97

(b) Make a vertical bar diagram showing mean Fasting glucose for female patients. (5+5)+5

(c) Laboratory Note Book. 10

(d) Viva-Voce. 10

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2010

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION

PAPER—XVI (Unit-31)

Full Marks : 35

Time : 2 Hours

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. 1 and any *three* from the rest.

1. Answer any *five* of the following : 1×5
   (a) What do you mean by leads?
   (b) Define electrocardiogram.
   (c) What type of EEG frequency bands or rhythms develop in relaxed with both eyes closed condition of the patient?
   (d) State two applications of biotelemetry.
   (e) Write the name of instrument for the determination of mobility of spermatozoa.
   (f) Define Biometrics.
   (g) Write the difference between afferent and efferent nerves.
   (h) What do you understand about Doppler effect.

(Turn Over)

2 (a) Explain in detail the different components of Man-Instrument System.

(b) Discuss in brief anyone method of blood pressure measurement technique.

(c) Define Instrument system.   5+3+2

3 (a) Discuss the process of maintaining Intensive Care Unit.

(b) What are the advantages of autoanalyses?

(c) Explain in details the working of Computed Axial Tomography (CAT) scanner.   4+2+4

4. (a) What do you know about Einthoven's triangle?

(b) What are the different ware forms of EEG?

(c) Mention the working principle of Magnetic blood flow meter with diagram.   3+2+5

5. (a) What is infrared thermometer?

(b) Write the working principle of pacemaker.

(c) How electronic spirometer is operated?   2+4+4

6. (a) What do you know about PFT?

(b) Discuss the basic working principle of USG.

(c) State few applications of ultrasound imaging.   3+4+3

2011

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(PRACTICAL)

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Time : 4 Hours

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. **Perform the following task :**

(a) Type the following para in MS-WORD using the justified format :

India's atomic scientists and technologists are world class. They have developed nuclear energy capacities despite heavy odds. But there are handicaps which have adversely affected our atomic energy programme.

We have inadequate production of uranium. The quality of our uranium sources is not comparable to those of other producers. Many countries have imposed sanctions on trade with India in nuclear materials, nuclear equipment and nuclear technology. As a result, our nuclear energy programme has suffered.

The nuclear agreement that we are negotiating with developed countries will end India's nuclear isolation. It will open up new opportunities for trade in dual-use high technologies and nuclear materials and equipment, opening up new pathways to accelerate industrialization of our country. It will enable us to provide electricity to meet the needs of our farmers, our artisans, our traders and our industry.   4

(b) Save the above para in MS-WORD file with Header and Footer. The Header should contain the word 'BMLT – 6th Semester' on the extreme left and your roll number on the extreme right. The Footer should contain the page number at the middle.   2

(c) Create a folder named BMLT + 'Roll No.' and save the file created as per (b) in CD or Pen drive in the presence of the examiner.

(d) Print the above matter and submit it to the exar

2006

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION

PAPER—XVI (Unit-31)

Full Marks : 50

Time : 2 hours

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Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Question No. 1 and
any *four* questions from the rest.

1. Answer *any five* of the following :　　　　　2×5
   (a) What is spirometry ?
   (b) State different lead configuration of ECG recording.
   (c) Write the full form of ICCU and ITU.
   (d) Draw and label (time & amplitude) of normal ECG of human.
   (e) What physiological parameter is measured using indicator dilution method ?
   (f) What do you understand by Acoustic Impedance ?
   (g) What is Ultrasound ? What is the range of Medical Ultrasound ?
   (h) What is ventricular complex ?

(Turn Over)

2. Explain CAT Scanner imaging technique.

3. Explain ECG in context to cardiac cycle. What are the different types of implantable pacemaker ? How do you reduce the generation of artifact during ECG tracing ?

5+3+2

4. What is man-instrument system ? What are the components of man-instrument system ? 4+6

5. Describe in brief the different process of blood pressure measurement techniques. Which one is most suitable as well as acceptable method — Explain with reason. How Kortchkoff Sound is generated ? 4+5+1

6. How do you measure residual, volume and tidal volume ? Mention the causes behind the generation of abnormal lung function test. Draw a model test result sheet for PFT (Pulmonary Function Test). $4+2\frac{1}{2}+3\frac{1}{2}$

7. Mention the name of the different waves of EEG. Describe the different factors affecting the alteration of EEG pattern. What is α-block ? What would be the EEG pattern of an epileptic patient ?

2+3+2+3

8. What is the principle of Biotelemetry ? Describe the application of Biotelemetry in diagnostic field. Describe the functioning mechanism of infrared thermometer.

3+4+3

2006

BMLT

6th Semester Paramedical Examination

MODERN BIO-MEDICAL INSTRUMENTATION

PAPER—XVI (Unit–32)

(PRACTICAL)

Full Marks : 50

Time : 4 hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

1. (a) Measure the blood pressure of your subject provided in supine, sitting and standing conditions and present the data in tabular form.

   (b) Interpret the results. 7+3

2. (a) Demonstrate the recording of ECG of the subject as per leads provided.

   (b) Compute R-T interval & S-T interval from your tracing.

   (c) Calculate the heart rate from the ECG tracing.

   $9+(1\frac{1}{2}+1\frac{1}{2})+3$

(Turn Over)

3. (a) Write the steps followed during USG imaging.

   (b) Write the names of scanning methods.   3+2

4. Laboratory Note Book.   10

5. Viva Voce.   10

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2006

BMLT

6th Semester Paramedical Examination

COMPUTER APPLICATION INCLUDING MS—OFFICE

PAPER—XVII (Unit-33)

Full Marks : 50

Time : 2 hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Question No. *1* and
any *four* questions from the rest.

1. Answer *any five* of the following :   2×5
   (a) What do you mean by ALU ?
   (b) What is the difference between CD and DVD ?
   (c) What is the role of SMPS ?
   (d) What is microchip ?
   (e) Convert $(69)_{10}$ to equivalent binary number system.
   (f) How does optical mouse differ from the traditional mouse ?
   (g) What is the usual space capacity of a floppy drive ?
   (h) What do you mean by information processor ?
   (i) What is the utility of JAVA ?

2. (a) What is the basic difference between desk-top and lap-top ?
   (b) What are the different components of a multimedia ?
   (c) State the use of multimedia system in health-care system.   2+4+4

(Turn Over)

3. (a) What is the basic difference between Digital and Analog Computer system ?

(b) Draw the Logical Block Diagram of a digital computer system. Clearly specify the function of each of the unit of the block diagram.   2+(3+5)

4. (a) Operating system works as an 'Resource Manager' and 'Interpretor'. Justify the statement.

(b) Describe the different generation of computers in the development of present computer system.   5+5

5. (a) Write the application 'cross+' package in a computer.

(b) Give a model method. of preparing basic statistics (sum, mean and SD) using MS-Excel.   2+8

6. (a) What is software ? Classify softwares used in computer system. State the differences between System Software and Application Software with example.

(b) What is the difference between a 'Program' and a 'Software'   (2+2+3)+3

7. (a) What do you mean by Digital representation of Image and Sound ?

(b) Give a model method for preparing a line diagram through MS-Excel.   4+6

8. Write the differences : $2\frac{1}{2} \times 4$

(a) Paste and Paste Special command in MS—Word ;

(b) Micro Computer and Super Computer ;

(c) Laserjet Printer and DMP ;

(d) MS—Word and MS—Powerpoint.

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2006

BMLT

6th Semester Paramedical Examination

COMPUTER APPLICATION INCLUDING MS-OFFICE

PAPER—XVII (Unit-34)

(PRACTICAL)

Full Marks : 50

Time : 4 hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer all questions.

1. Do the following task :

(a) Type the following para in MS Word :

Autoclaving is a time tested process of sterilization of medical waste using high temperature and high pressure steam. Effective Sterilization results in the destruction of bacteria, viruses, spores, fungi and other pathogenic micro-organisms. Conventional autoclaves are essentially cylindrical vessels with a provision for loading and unloading waste. Steam at high temperature and pressure is introduced into the vessel jacket. The steam transmits heat rapidly to the waste which in turn produces steam of its own. The process effectively destroys pathogen and renders the waste dry.

(b) Save the above para in CD in presence of the examiner.

(Turn Over)

(c) Print the above matter and submit it to the examiner.

6+2+2

2. (a) Create the following table in MS Word and print it with your roll no. :

| Sl No. | Name | General Features | | | High HbA$_1$C | High fasting insulin |
		Age (Yr)	Sex	Body(Wt in Kg)	Presence or Absence	
1.	Amit De	50	M	45	√	√
2.	Kapil Pal	46	M	60	√	√
3.	Pradip Das	51	M	47	—	—
4.	Jiban Samanta	49	M	61	√	×
5.	Sudip De	50	M	72	—	—

(b) Fix the symbolic form of the following in MS Word and print it with your roll no. :

(i) alpha; (ii) beta; (iii) summation;
(iv) microgram; (v) sigma. 5+5

3. Create the MS-Excel worksheet for the following patients and calculate the mean and standard deviation of each column of parameter.

5+5

Sl No.	Male Patient	Hb conc. (gm/dl)	Female Patient	Hb conc. (gm/dl)
1.	Bimal Das	12.31	Kajal Das	9.41
2.	Abhik Saha	13.54	Pranati Saha	7.32
3.	Mrinmoy Ghosh	16.01	Kamal Ghosh	5.90
4.	Tarit Topder	14.59	Mita Topder	11.12
5.	Debashish Samanta	14.61	Rupa Samanta	12.10
6.	Ujjal Pal	13.95	Sudeepa Pal	9.02

4. Laboratory Note Book.

10

5. Viva Voce.

10

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C/06/P.M.-BMLT/6th Seme.(Prac.)/17(Unit-34)

TB—100

2006

MODERN BIOMEDICAL INSTRUMENTATION
TECHNIQUES (PRACTICAL)

PAPER—XVI (Unit-32)

Full Marks : 50

Time : 4 hours

Answer all questions

The figures in the right-hand margin indicate marks

*Candidates are required to give their answers in their
own words as far as practicable*

Illustrate the answers wherever necessary

1. (a) Demonstrate the basic lead configuration.

   (b) Demonstrate the position of chest lead of the
   subject provided to you.

   (c) Take ECG tracing of a patient. $3 + 4 + 8$

   (*Turn Over*)

2. (a) Measure the blood pressure of a subject in supine, sitting and standing condition.

    (b) Describe the procedure and interpret the results.   6+2+2

3. Write CT imaging technique with sketch diagram.   5

4. Laboratory Note Book.   10

5. Viva-voce.   10

BMLT/VI/CA/XVII/U-34/Pr./06

2006

COMPUTER APPLICATION (PRACTICAL)

PAPER—XVII (Unit-34)

Full Marks : 50

Time : 4 hours

Answer all questions

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. Do the following task in the terminal and show it to the examiner and writ it on the answer script :

(a) Create a folder namely 'BMLT' plus Roll Number.

(b) Create a text file and save it on the newly created folder.

(c) Create a short cut of the folder and place it on the desktop.

(d) Copy the folder to floppy or CD. 2 + 2 + 2 + 2

2. Create a MS-Word document file and save it on your folder and give a print copy.
(Sample document is attached). 8

"ANAEMIAS"

Anaemia means lack of blood. All anaemias lead to a fall in the red cell count, haemoglobin concentration, and haematocrit value. Anaemia can arise from various defects of the red cells production (*aplastic anaemia*), maturation (*megaloblastic*) and defect in haemoglobin synthesis (*iron deficiency anaemia*).

Types of Anaemia	Numbers of Patient
Megaloblastic	$(10)^2 = 100$
Aplastic	$(5)^3 = 125$
Sickle cell	$(7)^2 = 49$
Iron deficiency	$(8)^4 = 4096$

2006

MODERN BIOMEDICAL INSTRUMENTATION

PAPER—XVI (Unit—31)

Full Marks : 50

Time : 2 hours

Answer **Q.No.1** and any four from the rest

The figures in the right-hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

Illustrate the answers wherever necessary

1. Answer any *five* of the following :   2 x 5

   (a) What is Biotelemetry ?

   (b) Name two methods of blood flow measurements.

   (c) Name two basic Leads for ECG.

   (d) State the normal values for PR interval and ST segment.

   (e) How the Korot koft sound is generated ?

(f) State the significance of Einthorem triangle.

(g) Write the full form of IRV and ERV.

(h) State the principle of infrared thermometer for skin temperature measurement.

(i) Name the waves of EEG.

2. What are the different type of pacemakers ? Discuss about internal pacemaker.   3 + 7

3. State the principle of Magnetic Blood Flow Meter ? Describe the function of Magnetic Blood Flow Meter.   3 + 7

4. State the principle of Ultrasonography ? What are the different scanning techniques of Ultrasonographic imaging ?   3 + 7

5. Describe CAT scanner in details.   10

6. State the principle and use of electronic spirometer. 10

7. Discuss how the intensive care unit is maintained mentioning the essential instruments required. Which type of patient needs admission to ICU.   7 + 3

8. How Blood pressure is measured using sphygmomanometer ? State the normal values of systolic and diastolic pressure.   7 + 3

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VIDYASAGAR UNIVERSITY

BMLT

6th Semester Paramedical Examination 2021

RESEARCH METHODOLOGY AND MEDICAL STATISTICS

PAPER—XVI (Unit–31)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *two* questions.   15×2

1. Compute the unbiased standard deviation (SD) and standard error of the mean of the following distribution of SGOT (units/L).   15

Class-interval	34-37	38-41	42-45	46-49	50-53
Frequency	4	8	15	7	6

2. Compute t-test for the data given below

Group A	10	4	3	2	4	2	5	10	5	5
Group B	4	6	8	2	9	1	12	13	10	10

Critical value: 1.10 at 0.05 level of significance

1.88 at 0.01 level of significance

Find if there is a significance difference between the mean of Group A and Group B. 15

3. What do you mean by retrospective and prospective study in research? Write the importance of applied research. State the differences between basic research and action research. Discuss the different project evaluation techniques. 4+4+3+4

4. What is research hypothesis? Write the characteristics and types of research hypothesis. 3+6+6

Answer any *one* question. 10×1

5. Determine the mean and median for the following distribution of height of Indian adult males :

Height (cm) class-interval	144.55-149.55	149.55-154.55	154.55-159.55	159.55-164.55	164.55-169.55	169.55-174.55	174.55-179.55	179.55-184.55
Frequency	1	3	24	58	60	27	2	2

Then find the mode of the distribution. 10

6. Discuss the basic research ethics that should be considered to conduct a research work. 10

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VIDYASAGAR UNIVERSITY

BMLT

6th Semester Paramedical Examination 2021

RESEARCH METHODOLOGY AND MEDICAL STATISTICS

PAPER—XVI (Unit–32)

(Practical)

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *two* questions. 25×2

1. Compute the mean, median and mode for the following distribution: 25

   Frequency distribution of I.Q. of following six-year-old children.

I.Q.	Frequency
160-169	2
150-159	3
140-149	7
130-139	19
120-129	37
110-119	79
100-109	69
90-99	65
80-89	17
70-79	5
60-69	3
50-59	2
40-49	1
Total	309

2. Compute the unbiased standard deviation (SD) and standard error of the mean of the following distribution of body heights (cm).   25

Class-interval	156-160	161-165	166-170	171-175	176-180
Frequency	4	14	25	11	6

3. The heights (cm) of following male and female college students are presented in the following table.

Males (X_1)	Females (X_2)
163	164
165	155
170	160
162	154
160	160
165	153
170	159
165	166
164	163
181	166
169	163
161	165
162	167
165	164
163	162
168	160
169	159
164	167
180	157
160	158
160	
167	
174	
168	
165	

Critical value: 2.017 at 0.05 level of significance

2.416 at 0.02 level of significance

2.695 at 0.01 level of significance

3.532 at 0.001 level of significance

Find if there is a significance difference between the mean heights of male and female college students.   25

4. Write a model research project proposal following any standard format.
25

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VIDYASAGAR UNIVERSITY

BMLT

6th Semester Paramedical Examination 2021

COMPUTER APPLICATION INCLUDING MS-OFFICE

PAPER—XVII (Unit–33)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *two* questions. 15×2

1. What is analog computer ? Write down the different types of ROM. What is "VDU", with an example. Write the functions of "RAM". Briefly describe the different types of software used in the field of medical laboratory technology. Write the features of windows. Write short note on Windows Explorer. 1+2+2+2+3+2+3

2. What is ICON ? Explain two types of navigational tools. What is clip board ? Write the shortcut key of the run dialog box. What is wallpaper ? Write the steps to set the wallpaper. Write a note on computer applications in pathological laboratory. 1+2+1+2+1+1+7

3. What is recycle bin ? What are Primary and Secondary memory ? Write short notes on RAM and ROM. What is pen drive ? What is Operating system ? Write down the differences between Hardware and Software.

1+3+4+1+2+4

4. How many types of text alignment are found and write their names ? How many types of cases are existing in MS-WORD. What is format painter ? What is clipart ? Write the steps to apply clipart. What is hyperlink ? Briefly describe the hyperlink. Write the process of insert picture in MS-WORD.

(1+2)+2+2+1+2+1+2+2

Answer any *one* question. 10×1

5. Write a short note on Chip. Write down the role of digital computer in health science. How many bytes are equal to 1 GB ? Name four computer viruses.

3+4+1+2

6. What is multimedia ? What is web page ? Write the use of multimedia in clinical pathology.

2+2+6

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VIDYASAGAR UNIVERSITY

BMLT

6th Semester Paramedical Examination 2021

COMPUTER APPLICATION INCLUDING MS-OFFICE

PAPER—XVII (Unit–34)

(Practical)

Full Marks : 50

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *two* questions. 25×2

1. Write down briefly how to prepare a report using computer in Pathological lab.

2. Write the steps of data representation using computer in Pathology lab.

3. Write down the procedure to create a bio-data in MS-Word.

4. Write down the steps of operation of personal computer.

NEW

2018

BMLT

6th Semester Paramedical Examination

RESEARCH METHODOLOGY AND MEDICAL STATISTICS

PAPER—XVI (Unit-31)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. *1* and any *three* from the rest.

1. Answer any *five* questions :   5×2

   (a) What do you mean by literature review ?

   (b) What is applied research.

(Turn Over)

(f) What is the mathematical relation between SD and variance?

(g) What is one tail 't' text'?

(h) Write the formula for the interrelationship among mean, median and mode.

(i) What is single group experimental design?

(j) What is degree of freedom?

3. (a) Write the criteria of a good research project.

(b) State the importance of hypothesis in the formulation of project.

(c) Write the advantages of mean as central tendenc   3+4+

2. (a) What do you mean by level of significance?

(b) Compute the median from the following data.

Blood sugar level (mg/dl)	Frequency
80–90	3
91–100	4
101–110	5
111–120	6
121–130	3
131–140	2

(c) What do you mean by critical 't' value ?   2+6+2

4. (a) Describe the criteria of 'uncontrolled group experimental' design.

(b) Write the advantages and disadvantages of matched group experiment.

(c) What do you mean by preliminary part of the project proposal ?   3+(2+2)+3

5. (a) Write the importance of alternative hypothesis.

(b) State the impact of hypothesis on project formulation.

(c) The reference value of adult Indian about systolic blood pressure is 120 mm of Hg. In a survey, the systolic blood pressure of six individual given below. Find out whether or not, the mean value of your collected data is significantly differ from the reference value or not at $p < 0.05$.

Individual No.	Systolic pressure (mm of Hg)
1	110
2	128
3	132
4	140
5	136
6	138 $\quad$ $p < 0.05(5) = 2.571$

3+2+5

6. (a) Write the impact of literature review on parameter selection in research.

(b) How does research involved in information generation ?

(c) Write the difference between qualitative and quantitative research. 3+4+3

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(a) What is system utility software ? Give example.

(b) Explain the term hypernedization in Ms-Word.

(c) What is the use of Memory Buffer Register (MBR

(d) Define network protocol. Give an example of netwo protocol.

(e) Represent the following binary number in 2' complement form (111 1001)

(ii) What is storage ?

(a) Convert (111 001)₁₀ code it's equivalent binary number system.

(b) Subtract (11101)₂ from (1 100)₂ using 1's complement method.

(c) What is ASCII encoding standard ? What is the difference between ASCII and Uni code ?

3+3+(2+2)

(Continued)

3. (a) What is internet ? Give some examples of services provided by internet. How does it differ with intranet ?

(b) What is pivot table and reference chart ? Describe with example.   (2+2+2)+(2+2)

4. (a) What is the difference between multitasking and multiprocessing ?

(b) List the functions of a modern computer operating system.

(c) What do you mean by primary memory ? What are the different categories of primary memory ?
                    2+3+(2+3)

5. (a) What kind of pathological laboratory data can be stored digitally ? Give examples.

(b) Is there any difference between 'Save' and 'Save As' in Ms-Word ? Explain.

(c) What are the database components of Ms-Access ? Describe any one of then.   3+2+(2+3)

$4 \times 2\frac{1}{2}$

6. Write short notes :

   (a) Clip Art

   (b) LAN

   (c) CD

   (d) Impact Printer

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