MRT

Reg. No.										

MANIPAL UNIVERSITY

FIRST YEAR B.Sc. R.T./B.Sc. M.R.T./B.Sc. C.V.T./ B.Sc. R.R.T & D.T./M.Sc. N.M.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: ANATOMY

(2015 & 2010 SCHEME/2011 SCHEME/2011 SCHEME/BDT 101/NR

Thursday, June 02, 2016

Time: 10.00-11.30 Hrs. Max. Marks: 40

✍ **Answer ALL the questions.**

1. Name the parts of gastrointestinal system. Describe the stomach in detail.

(5+5 = 10 marks)

2. **Write short notes on:**

2A. Urinary bladder

2B. Fallopian tube / uterine tube

2C. Synovial joints

2D. Spinal cord

2E. Pharynx

2F. Gall bladder

(5 marks × 6 = 30 marks)

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MANIPAL UNIVERSITY

FIRST YEAR BOT/B.Sc. MRT/B.Sc. MLT/B.Sc. CVT/B.Sc. RT/B.Sc. RRT & DT/M.Sc. NMT DEGREE EXAMINATION – JUNE 2016

SUBJECT: PHYSIOLOGY

(2015 BATCH (BOT 106)/2011 SCHEME/ /2011 SCHEME (PAPER II)/2015 & 2010 SCHEME/BDT 102/NR (PAPER I)

Saturday, June 04, 2016

Time: 10.00-11.30 Hours. Max. Marks: 40

- **Answer ALL questions.**
- **Draw diagrams and flow charts wherever appropriate.**

1. **Essay Questions:**

1A. Mention three functions of middle ear. Describe any one.

1B. Mention the normal heart rate. Give its normal value. Mention two conditions each for tachycardia and bradycardia.

1C. List any four hormones secreted by anterior pituitary and explain three actions of any one hormone.

1D. Draw a labelled diagram of dorsal column tract and list the sensations carried by it.

(5 marks × 4 = 20 marks)

2. **Short Answer Questions:**

2A. Mention two functions of plasma proteins.

2B. Define and give the normal value of vital capacity.

2C. Give two differences between skeletal muscle and smooth muscle.

2D. Draw a labeled diagram of a nerve action potential.

2E. List two functions of liver.

2F. Define GFR. Give its normal value.

2G. List any two functions of hypothalamus

2H. Mention two actions of testosterone.

2I. List two functions of skin.

2J. Mention two hazards of mismatched blood transfusion.

(2 marks × 10 = 20 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: RADIOBIOLOGY

(2011 SCHEME)

Tuesday, June 07, 2016

Time: 10:00-11:30 Hrs. Max. Marks: 40

1. **Answer all the questions:**

1A. Briefly discuss the experimental procedure of $LD_{50(30)}$ calculation for gamma radiation.

1B. Describe the various parameters of mammalian cell survival curve.

1C. Describe the experiments to prove the higher radiosensitivity of the cell nucleus in comparison to the cytoplasm.

1D. Add a note on the Bone marrow syndrome.

(5 marks × 4 = 20 marks)

2. **Answer all the questions.**

2A. Describe in detail the cellular effects of ionizing radiation.

2B. Discuss the effect of radiation on:

i) Fetus ii) Skin iii) DNA iv) Chromosomes

(10 marks × 2 = 20 marks)

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MANIPAL UNIVERSITY

FIRST YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: BASIC AND APPLIED MATHEMATICS

(2011 SCHEME)

Thursday, June 09, 2016

Time: 10:00-13:00 Hrs. Max. Marks: 80

✍ **Answer any FIVE full questions.**

1A. Let A={X: X is a natural number and a factor of 18}

B={X: X is a natural number and less than 6}

Find

i) $A \cup B$ and $A \cap B$ ii) $A \cup B = A \cap B$

1B. Solve:

i) If $\sin A = \frac{3}{5}$ and A is acute, Find $\cos A$.

ii) $(1 - \tan\theta)^2 + (1 + \tan\theta)^2 = 2\sec^2\theta$.

1C. Sides of triangles are 7cm, 24cm, 25cm. Determine whether it is a right angle triangle. If so find its hypotenuse side.

(4+6+6 = 16 marks)

2A. Solve:

i) $\int (4x^3 - 1)\,dx$ ii) $\int \left(\frac{1}{x} + e^x\right) dx$

2B. Differentiate using first principle: $y = e^x$.

2C. Define order and degree of a Differential equation and give two examples.

(4+6+6 = 16 marks)

3A. Define Limit of a function and Find $\lim_{x\to 0} \frac{4x^2+3x+1}{3x^2-4x-1}$.

3B. Check whether the following are quadratic equation:

i) $(x-2)^2 + 1 = 2x - 3$. ii) $x(2x+3) = x^2 + 1$.

3C. Two Rails are represented by the equations $x + 2y - 4 = 0$ and $2x + 4y - 12 = 0$. Represent this situation geometrically.

(4+6+6 = 16 marks)

4A. Draw Venn Diagram for the following: $A \cup B, A \cap B$ and $A \cap (B \cup C)$

4B. Evaluate: $\int \frac{3x-1}{(x-3)(x+1)}\,dx$ by partial fraction method.

4C. Form the differential equation of the following

i) $x^2 + y^2 = a^2$ ii) $y^2 = 4ax$.

(4+6+6 = 16 marks)

5A. Find the value of K if the points $A(2,3), B(4,K), C(6,-3)$ *are collinear.*

5B. Define Constant Function, Identity Function, linear function with examples.

5C. Given that $\tan A = \frac{4}{3}$, Find $\sin A, \cos A, cotA, Sec\, A, Cosec\, A.$

(4+6+6 = 16 marks)

6A. Draw the graph of y= sinx, using trigonometric values of sin.

6B. Solve the differential equation, $\sec x \tan x\, dx + \tan y\, dy = 0.$

6C. Check whether the pair of equations $x + 3y = 6$ *and* $2x - 3y = 12$ is consistent. If so, solve them graphically.

(4+6+6 = 16 marks)

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FIRST YEAR B.Sc. M.R.T. DEGREE EXAMINATION – JUNE 2016

SUBJECT: FUNDAMENTALS OF COMPUTERS AND COMPUTER APPLICATIONS
(2011 SCHEME)

Saturday, June 11, 2016

Time: 10:00-11:30 Hrs. Max. Marks: 40

Answer any FOUR questions and version of MS Office is 2007.

1A. Distinguish between memory devices and storage devices.

1B. Write a short note on binary number system.

(8+2 = 10 marks)

2A. Explain output device- inkjet printer.

2B. Discuss different text codes.

2C. Define system software and application software.

(4+4+2 = 10 marks)

3A. Describe the use of *Find Replace* facility in MS-Word with options- *Match Case* and *Find Whole Words Only*.

3B. Write the steps to create the following table in MS-Word.

IV Sem Lateral Entry			Class Room	
Date	Time	Subject	506	507
			Examiner	Examiner
7/4/2014	10.15	AJP	VM	AH
	3.15	ACN	TT	NKM
8/4/2014	10.15	WE	MKN	MS
	3.15	Cloud-Computing	AK	GNK
9/4/2014	10.15	MIS	RR	PK
		KM	AR	SS

(4+6 = 10 marks)

4. Answer the following MS-Excel questions.

4A. Consider the following Excel sheet-

	A	B	C	D
1	Num1	Num2	Num3	Largest
2	10	20	28	Num3
3	11	30	14	
4	34	22	12	
5				

Write the steps to find largest of three numbers (num1, num2, num3) using formula and make corresponding largest entry in column –D.

4B. Write the steps to mark cells in num1 (column –A) with values less than 20 using conditional formatting.

(5+5 = 10 marks)

5. **Answer the following questions:**

5A. Discuss any five HTML tags with example.

5B. Assume that Mark1 is a number type field in a table student, write the steps to set validation rule *–Marks value between 0 to 100*, validation text - *'Marks not in range'* also set default value 40.

(5+5 = 10 marks)