MANIPAL ACADEMY OF HIGHER EDUCATION

SECOND SEMESTER M.Sc. MEDICAL (ANATOMY, PHYSIOLOGY, BIOCHEMISTRY, PHARMACOLOGY, MICROBIOLOGY) DEGREE EXAMINATION – OCTOBER 2020

SUBJECT: INTRODUCTION TO RESEARCH – COMMON CORE (MCC 602)

Monday, October 19, 2020

Time: 14:00 – 16:30 Hrs.   Maximum Marks: 50

✍ **Answer ALL the questions.**

✍ **Long answer questions:**

1. What are the different types of research? Discuss the steps involved in research process.

(10 marks)

2A. Write an explanatory note on sampling distribution with example.

2B. If Z is normally distributed with $\mu = 0$ and $\sigma = 1$. Find the following probabilities:

i) $P(Z \leq 2)$ ii) $P(-1 \leq Z \leq 2)$ iii) $P(Z \geq 3)$

(10 marks)

3. **Short Answer Questions:**

3A. Calculate the variance from the following distribution of marks obtained by students.

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80
No. of Students	2	3	12	23	7	2	1

3B. What is Non-probability sampling? Explain quota sampling with its advantages and disadvantages.

3C. From the following data, use X^2-test and conclude whether inoculation is effective in preventing tuberculosis:

Group	Attacked	Not Attacked	Total
Inoculated	20	90	110
Not inoculated	36	74	110
Total	56	164	220

(Given, $X^2_{0.05,1} = 3.84$)

3D. Explain case-control study design, its advantages and disadvantages with an example.

3E. Define following terms:

i)   Sensitivity   ii)   Specificity   iii)   Positive predictive value

iv)   Negative predictive value.

3F. Describe any five salient statements of Nuremberg code.

(5 marks × 6 = 30 marks)

✎ **Answer ALL the questions.**

✎ **Long Essays:**

1. Classify anticholinesterases with suitable examples. Explain their therapeutic uses. Add a note on the management of organophosphorous poisoning.

$$(3+4+3 = 10 \text{ marks})$$

2. Enumerate **four** angiotensin receptor blockers (ARBs). Explain their uses and adverse effects. Mention the differences between ARBs and ACE inhibitors.

$$(2+3+2+3 = 10 \text{ marks})$$

3. **Answer the followings:**
3A. Explain the therapeutic uses and adverse effects of verapamil.
3B. Write briefly on tolvaptan.
3C. Explain the mechanism of action and therapeutic uses of spironolactone.
3D. Describe the pharmacological basis of using digoxin in heart failure. What is the current status of digoxin in the management of heart failure?
3E. Give **three** examples each for nonselective alpha blockers and selective alpha1 blockers. What are the advantages of selective alpha1 blockers over nonselective alpha blockers?
3F. Compare and contrast pancuronium and succinylcholine.

$$(5 \text{ marks} \times 6 = 30 \text{ marks})$$

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SECOND SEMESTER M.Sc. (MEDICAL PHARMACOLOGY) DEGREE EXAMINATION – OCTOBER 2020

SUBJECT: CHEMOTHERAPY (MPH 606)

Wednesday, October 21, 2020

Time: 14:00 – 16:30 Hrs.   Maximum Marks: 50

✍   **Answer ALL the questions.**

✍   **Long Essays:**

1.   Mention four groups of systemic antifungal agents with suitable examples. Explain the mechanism of action, therapeutic uses and adverse effects of any one.

                                                            (4+2+2+2 = 10 marks)

2.   Enumerate four macrolide antibiotics. Describe the spectrum, mechanism of action, therapeutic uses and adverse effects of any one.

                                                            (2+2+2+2+2 = 10 marks)

3.   **Answer the followings:**

3A.   Explain the mechanism of action, therapeutic uses and adverse effects of vancomycin.

3B.   Explain the pharmacotherapy of multibacillary leprosy.

3C.   Write briefly on artemisinin based combination therapy.

3D.   Explain the mechanism of action and adverse effects of protease inhibitors.

3E.   Write briefly on the antipseudomonal penicillins.

3F.   Describe the role of hormones and hormone antagonists in the treatment of cancer.

                                                            (5 marks × 6 = 30 marks)

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