[KU 705] **Sub. Code: 4165**

FIRST B.PHARM. DEGREE EXAMINATION
(ReRevised Regulations)Candidates Admittted upto 2003-04
Paper V – MATHEMATICS INCLUDING BIOSTATISTICS
Q.P. Code : 564165

Time : Three hours **Maximum : 75 marks**

I. Essay Questions : **(2 X 20 = 40)**

Answer any TWO questions.

1. a) Solve : $XYP^2 + (X+Y)P + 1 = 0$. **(10)**

   b) Before an increase in dosage of antibiotics on fish reared in a research station, 400 out of 600 were in good health condition. After an increase in dosage of antibiotics, 450 fish were in good condition in a sample of 900 fish. Do you think that there has been any significant increase in health condition of the fish after the increase in dosage. (for Z(0.01) = 2.58 S.E). **(10)**

2. a) Integrate with respect to X: $\dfrac{e^x(1+\sin x)}{1+\cos x}$ **(10)**

   b) Two hundred individuals are classified to their eye and hair color and we have the following contingency table. Test whether the eye and hair colors are independent. (for v=2, x^2 0.05 =5.99). **(10)**

	Haircolor	
Eyecolor	Black	Grey
Black	40	60
Blue	35	25
Brown	25	15

3. a) Differentiate $\tan^{-1} 2x$ with regard to $\cos^{-1} 1-x^2$

   $\dfrac{}{1-x^2}$ $\dfrac{}{1+x^2}$ **(10)**

   b) A simple random sample of size 400 has mean 25, the population variance being 25. Find an internal estimate of the population mean with a confidence level of i) 99% and ii) 95%. If population variance is not given, then what should be done to find out the required internal estimates. **(10)**

II. Write Short Notes . Answer any FIVE questions. **(5X 5 = 25)**

1. A sales man has 60% chance of making a sale to each customer. The behaviour of successive customers in independent. If two customers A and B enter, what is the probability that the salesman will make to A or B.
2. Resolve into partial fractions : $\dfrac{2X+3}{(X^2+1)(X+4)}$
3. Calculate standard deviation from the following data.

X	6	9	12	15	18
Y	7	12	19	10	2

4. Evaluate: $\lim_{X \to \pi/2} (1+\cos X)^3 \sec x$
5. State the various measures of central tendency and explain each one presizely
6. Find the laplace transform of $L\{e^{2t} \sin 2t\}$.
7. Name the different types of diagrams and explain any one of them.

III. Short Answers: **Answer any FIVE questions.** **(5X2 = 10)**

1. Write two lines about – multiple correlation.
2. Write the two regression equations.
3. Define the term census.
4. What are the various method used in collecting primary data.
5. Explain the term 'resolution into partial fractions'.
6. Write the standard binomial series of $(1-X)^{-p/q}$.
7. What is a symmetric matrix.

August - 2009

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I. Essay Questions : **(2 X 20 = 40)**

Answer any TWO questions.

1. Find the co-efficient of variation for the following data.

C.I	10-20	20-30	30-40	40-50	50-60	60-70
F	10	15	32	40	22	18

2. Do the following data provide evidence of the effectiveness of inoculation.

	Attacked	Not attacked
Inoculated	20	300
Not inoculated	80	600

(The table valve of X^2 for 1 d.f. at 5% level = 3.841)

3. a) Explain the methods of collecting primary data.
   b) Find the mean, median and mode form the following :
   57, 58, 61, 42, 38, 65, 72 ,66.

II. Write Short Notes . Answer any FIVE questions. **(5X 5 = 25)**

1. Resolve into partial fractions : $\frac{1}{(X-1)(X+2)^2}$

2. Sum to infinity 1+3/4+3.5/4.8+3.5.7/4.8.12+…….
3. If $A = \begin{pmatrix} 1 & 0 & 2 \\ 3 & 1 & 4 \\ 5 & 0 & 6 \end{pmatrix}$ $B = \begin{pmatrix} 2 & 1 & -1 \\ 3 & 0 & -2 \\ 0 & 1 & 1 \end{pmatrix}$
   Compute 3A-4B.
4. Let A = { 1,2,3,4,6,7}, B= {3,4,7,8,9,10} C= {2,4,6,8}
5. Expand COS50 interms of powers of COS.
6. Evaluate ∫3X cos 5x dx.
7. Solve dy/dx+ytanx = cosx.

III. Short Answers: Answer any FIVE questions. **(5X2 = 10)**

1. Define probability.
2. Write a note on correlation.
3. Co efficient of variation of two series are 75% and 90% and their standard deviations are 15 and 18 respectively. Find their mean.
4. Write about simple bar diagram.
5. Write about histogram.
6. Define range.
7. Differentiate $3X^2-4X+1$

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