

Registration No:

--	--	--	--	--	--	--	--	--	--

Total Number of Pages: 2

B. Pharm
PH. 1.11

1st Semester Back Examination 2016-17
REMEDIAL BIOLOGY
(According to Old Syllabus)

BRANCH: PHARMACY

Full Marks-70

Time: 3 Hours

QUESTION CODE: Y745

Answer Question No. 1 which is compulsory and any five from the rest.

The figures in the right-hand margin indicate marks.

1) Answer the following questions: (2×10)

a) What are the functions of Xylem and Phloem?

b) Define the term Phyllotaxy.

c) Name the causative organism for malaria and Filaria.

d) What do you mean by Ecdysis?

e) What are digenetic parasites? Give examples.

f) Write the types of feeding in amoeba.

g) What are the diseases caused by different species of trypanosomes?

h) How osmoregulation in amoeba does take place?

i) What are the functions of mitochondria?

j) What is Pseudopodia?

2. Explain the structure and lifecycle of Trypanosoma with a neat labeled diagram? (5+5)

3. Write briefly about the lifecycle of mosquito? (10)

4. What is venation? Give a brief description about the different types of venation. (3+7)

5. Write short notes: (5×2)

a. Locomotion of amoeba

b. Mitotic cell division

6. Define tissue. Classify it. Describe the different types of permanent tissues found in the plant body? (3+7)

7. Describe the structure and lifecycle of silkworm. (10)

8. Explain the structure and life cycle of Housefly. (10)

Registration No:

--	--	--	--	--	--	--	--	--	--

Total Number of Pages: 03

B.PHARM
15PH106
1st Semester Regular / Back Examination 2016-17

REMEDIAL MATHEMATICS

BRANCH: PHARMACY

Time: 3 Hours

Max Marks: 100

Q.CODE: Y560

Answer Part-A which is compulsory and any four from Part-B.
 The figures in the right hand margin indicate marks.

Part – A (Answer all the questions)
Q1 Answer the following questions: multiple type or dash fill up type (2 x 10)

a) The value of $\begin{vmatrix} 17 & 58 & 97 \\ 19 & 60 & 99 \\ 18 & 59 & 98 \end{vmatrix} = \underline{\hspace{2cm}} (1,0,-1,2)$

b) State the order of $[a \ b \ c] = \underline{\hspace{2cm}} (1 \times 3, 3 \times 1, 2 \times 1, 1 \times 2)$

c) i) The median of the series 1, 3, 7, 10, 2, 4 is $\underline{\hspace{2cm}}$.

ii) The mode of the series 1, 2, 1, 3, 1, 4, 1 is $\underline{\hspace{2cm}}$.

d) If $\cos \alpha = \frac{3}{5}, \cos \beta = \frac{5}{13}, 0 < \alpha < \frac{\pi}{2}, 0 < \beta < \frac{\pi}{2}$,
 the value of $\sin(\alpha - \beta) = \underline{\hspace{2cm}} (\frac{16}{65}, \frac{-16}{65}, \frac{56}{65}, \frac{-56}{65})$

e) The slope of the line joining the points (1,4) and (3,5) is $\underline{\hspace{2cm}}$.

f) The distance between the points (3,4) and (-2,1) is $\underline{\hspace{2cm}} (\frac{-1}{2}, \frac{1}{2}, \frac{2}{3}, \frac{-2}{3})$

g) The distance between the points (3,4) and (-2,1) is $\underline{\hspace{2cm}}$.

$(\sqrt{33}, \sqrt{-34}, \sqrt{34}, \sqrt{32})$

g) $\lim_{x \rightarrow 3} \frac{x^2 - 9}{x - 3} = \underline{\hspace{2cm}}$

h) Find the differential coefficient of \sqrt{x} with respect to x^2 .

i) $\int_0^{\frac{\pi}{4}} \sec^2 x dx = \underline{\hspace{2cm}} (0,1,-1,2)$

j) Evaluate: $\int \log x dx$.

Q2 Answer the following questions: Short answer type (2 x 10)

- Divide 57 into two parts whose product is 782.
- What is non-singular matrix and give one example?
- Define mode and give one example.
- Find the value of $\cos 75^\circ$
- Find the value of a when the distance between the points (3,a) and (4,1) is $\sqrt{10}$.
- Prove that the points (2, 5), (4, 6) and (8, 8) are collinear.
- Evaluate: $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x \sin x}$
- Differentiate $e^{\tan x}$ with respect to $\sin x$.
- Evaluate: $\int \frac{1}{\sqrt{x+a} + \sqrt{x+b}} dx$
- Find the value of $\int_{-\pi}^{\pi} \cos x dx$

Part – B (Answer any four questions)

Q3 a) Solve by Cramer's rule the equations (8)

$$\begin{aligned} 3x + 5y - 7z &= 13 \\ 4x + y - 12z &= 6 \\ 2x + 9y - 3z &= 20. \end{aligned}$$

b) Solve: $2x^4 + 9x^3 + 8x^2 + 9x + 2 = 0$ (7)

Q4 a) Find the inverse of the matrix $A = \begin{bmatrix} 2 & 3 & 4 \\ 4 & 3 & 1 \\ 1 & 2 & 4 \end{bmatrix}$ (8)

b) Solve: $(x^2 + \frac{1}{x^2}) + 4(x + \frac{1}{x}) + 6 = 0, x \neq 0$. (7)

Q5 Compute the mean, median and mode of the following frequency distribution: (5+5+5)

Class	0-11	11-22	22-33	33-44	44-55	55-66
Frequency	9	17	28	26	15	8

Q6 a) Show that $\tan 3A \cdot \tan 2A \cdot \tan A = \tan 3A - \tan 2A - \tan A$ (5)

b) If $\tan(A+B) = x$ and $\tan(A-B) = y$, find the values of $\tan 2A$ and $\tan 2B$ (5)

c) Prove that $\frac{\sin A + \sin 3A + \sin 5A + \sin 7A}{\cos A + \cos 3A + \cos 5A + \cos 7A} = \tan 4A$ (5)

Q7 a) Find the equations of the medians of a triangle ABC, the co-ordinates of whose vertices are A(-1,6), B(-3,-9) and C(5,-8) **(8)**

b) Find the equations of the altitudes of the triangle whose vertices are A(6,-1), B(-3,8) and C(3,2) **(7)**

Q8 a) Evaluate: $\lim_{x \rightarrow 0} \frac{3^x - 2^x}{\tan x}$ **(5)**

b) Find $\frac{dy}{dx}$ if $y = x^2 \sin x + 2x \cos x - 2 \sin x$ **(5)**

c) Find $\frac{dy}{dx}$ if $y = x^x$ **(5)**

Q9 a) Evaluate: $\int \frac{x}{\sqrt{x+a}} dx$ **(5)**

b) Solve: $\int e^x \cos x dx$ **(5)**

c) Solve: $\int \frac{5x-3}{(x+1)(x-3)} dx$ **(5)**

Registration no:

--	--	--	--	--	--	--	--	--	--

Total Number of Pages: 02

B.PHARM
PH.1.13**1st Semester Back Examination 2016-17****REMEDIAL MATHEMATICS****BRANCH: PHARMACY****Time: 3 Hours****Max Marks: 70****Q.CODE: Y559**

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following questions: (2 x 10)

- Form the quadratic equation whose roots are $1+\sqrt{3}$ and $1-\sqrt{3}$
- What is singular matrix and give one example?
- Define arithmetic mean and give one example.
- Find the value of $\sin 75^\circ$
- Find the area of triangle whose vertices are A(6,3), B(-3,5) and C(4,-2)
- Determine the equation of a line passing through the point (-4,-7) and parallel to x-axis.
- Find $\lim_{x \rightarrow 2} \frac{(x^4-16)}{(x-2)}$
- Find $\frac{dy}{dx}$ if $y = (3-x^2)(x^3-x+1)$
- Evaluate: $\int \frac{1}{\sqrt{x+a}+\sqrt{x+b}} dx$
- Evaluate: $\int_1^2 \frac{1}{x} dx$

Q2 a) Solve by Cramer's rule **(5)**
 $x-2y=4$
 $-3x+5y=-7$

b) Solve: $x - 2\sqrt{x} - 6 = 0$ **(5)**

Q3 a) Solve the system of equations by matrix method: **(5)**
 $2x+3y=4$
 $x+3y+7$

b) Solve: $9x^4 + 20 = 29x^2$ **(5)**

Q4 Find the mean and median of the following frequency distribution **(10)**

Class	0-11	11-22	22-33	33-44	44-55	55-66
Frequency	9	17	28	26	15	8

Q5 a) Prove that: $(1+\cot A - \operatorname{cosec} A)(1+\tan A + \sec A) = 2$ **(5)**

b) Show that : $\frac{\tan A + \tan B}{\tan A - \tan B} = \frac{\sin(A+B)}{\sin(A-B)}$ **(5)**

Q6 a) Prove that the points A (1,-2), B (3, 6), C (5, 10) and D (3, 2) are the vertices of a parallelogram. **(5)**

b) Four points A(6,3), B(-3,5), C(4,-2) and D(x,3x) are given in such a way that $\frac{\text{Area of triangle } DBC}{\text{Area of Triangle } ABC} = \frac{1}{2}$, find x. **(5)**

Q7 a) Evaluate: $\lim_{x \rightarrow 0} \frac{2^x - 1}{(1+x)^{\frac{1}{2}} - 1}$ **(5)**

b) Find $\frac{dy}{dx}$ if $y = (\cos x)^{\cos x}$ **(5)**

Q8 a) Evaluate: $\int \frac{e^x - \sin x}{e^x + \cos x} dx$ **(5)**

b) Solve: $\int \frac{6x+7}{(x+2)^2} dx$ **(5)**