**ARKA JAINUniversity, Jharkhand**

6th Semester 2nd Internal Examination – 2022-2023



**Subject: Biopharmaceutics & Pharmacokinetics (Theory)**

**Course: B. Pharm** **Full Marks: 30**

**Time: 1hr**

* **All Questions are compulsory**.
1. **Multiple Choice Questions**$\left(10×1=10\right)$
2. The Volume of distribution of a drug is:

|  |  |
| --- | --- |
|  A. A measure of total fluid volume | B. A relationship of amount of drug present in the body and that of plasma |
| C. An expression of total body volume | D. Proportional of bioavailability |

1. Which organ has high blood perfusion rate?

|  |  |
| --- | --- |
| A. Brain | B. Kidney |
| C. Lung | D. Muscle |

1. Total body water is high in:

|  |  |
| --- | --- |
| A. Adults | B. Elders |
| C. Infants | D. Obese |

1. The plasma volume can be determined using:

|  |  |
| --- | --- |
| A. Antipyrin | B. Evans blue |
| C. Heavy water | D. Inulin |

1. Extracellular fluid volume can NOT be determined by:

|  |  |
| --- | --- |
| A. I-131 albumin | B. Inulin |
| C. Raffinose | D. Sodium ions |

1. Total body water (in liters) is approximately:

|  |  |
| --- | --- |
| A. 3 | B. 6 |
| C. 15 | D. 42 |

1. An important protein that binds most of the basic drugs is:

|  |  |
| --- | --- |
| A. α-Acid glycoprotein  | B. Albumin |
| C. Globulin | D. lipoprotein |

8**.** How many sites are identified in the albumin for drug binding?

|  |  |
| --- | --- |
| A. 1 | B. 2 |
| C. 3 | D. 4 |

9. Drug transfer through placenta is observed by the following factors EXCEPT:

|  |  |
| --- | --- |
| A. Foetal sex | B. Gestational  |
| C. Molecular weight | D. Plasma protein binding |

10**.** Perfusion rate is low in one of the following organs

|  |  |
| --- | --- |
| A. Adipose tissue | B. Bone |
| C. Kidney | D. Muscle |

1. **Long Answers (Answer 1 out of 2)** $\left(1×10=10\right)$
2. Classify the body components to which drugs normally bind and explain briefly.
3. Name the physiological barriers to distribution of drugs and write their significance briefly.
4. **Short Answers (Answer 2 out of 3)**$\left(2×5=10\right)$
5. Define displacement interaction. What characteristics of the displacer and thedisplaced drug are important for displacement interactions to be clinicallysignificant?
6. What is the significance of tissue-drug binding from distribution viewpoint?
7. Define apparent volume of distribution. Why cannot the volume of distribution of a drug have a true physiological meaning?