BANC 109 Human Growth and Development

TUTOR MARKED ASSIGNMENT (TMA)

Course Code: BANC 109

Assignment Code: BANC 109/ASST/TMA/July 2026 and January 2027

Total Marks: 100

There are three Sections in the Assignment. Answer questions from all three Sections.

Assignment - I

Answer the following questions in about 500 words each. **20x2=40**

a) Explain the unique patterns of human growth.

b) Discuss body composition and its anthropological significance.

Assignment - II

Answer any two of the following questions in about 250 words each. **10x2=20**

Write short notes on any two of the following:

i. Secular trend

ii. Adaptation to heat stress

iii. Dietary intake method of nutritional assessment

Answer any two of the following questions in about 150 words each. **5x2=10**

a) Canalisation

b) Bergmann's Rule

c) Kwashiorkor

Assignment - III

Answer the following questions in about 250 words each. **10x3=30**

a) Discuss any two somatometric measurements used in growth assessment.

b) Explain the use of percentile and Z-score in assessing growth status.

c) Describe BMI and waist-hip ratio as indices of obesity assessment.

a) Explain the unique patterns of human growth.

Answer

Human growth means the increase in body size and the changes in shape and proportions from conception to adulthood. Development includes the improvement of body functions, movement, thinking and social behaviour. Human growth is different from that of many other mammals because our childhood is long, the brain grows rapidly in early life, and puberty brings a noticeable growth spurt. These features help us learn complex skills and adjust to our environment.

Growth begins before birth. The prenatal period includes the germinal, embryonic and fetal stages. During the embryonic stage, the main organs take shape. In the fetal stage, the body increases rapidly in length and weight. The mother's nutrition, health, infections and exposure to harmful substances can affect growth. Birth weight is therefore an important early indicator, although it cannot alone predict an individual's later height or health.

Human growth is not uniform. A child's height and weight do not increase by exactly the same amount every year. Growth is very fast in infancy, becomes steadier in middle childhood, and speeds up again during adolescence. This is called a *non-linear growth pattern*. A normal child may follow a particular percentile channel for years without being exactly at the population average. A sudden fall across growth channels needs attention, especially when illness or undernutrition is present.

A long period of childhood is a human characteristic. Humans spend more time as dependent infants and children than most primates. Early dependence is connected with the need for care, learning and social interaction. A long juvenile period provides opportunities to learn language, cooperation, tool use and cultural practices. The slowing of physical growth during middle childhood also permits important learning before sexual maturity.

Different body parts grow at different rates. Growth is described as *differential* or *allometric* because the head, trunk and limbs do not follow identical schedules. A newborn has a relatively large head and short legs. With increasing age, the limbs lengthen and adult body proportions gradually appear. This is part of the cephalocaudal trend, in which development generally proceeds from head towards feet. The proximodistal trend describes control and growth