SUMMER ASSIGNMENT

CLASS – XII SUBJECT: APPLIED MATHEMATICS (241)

Q.1 Find the value of x, given that $x \equiv 23 \pmod 7$; if $21 \leq x < 31$

Q.2 Find the positive integers less then 50 forming the equivalence class 4 for modulo 6.

Q.3 Find 3^{128} mod 7.

Q.4 A shopkeeper has 1 quintal of wheat , part of which she sells at 18% gain and the rest at 28% gain . In total she gains 24% . Find the quantity of wheat sold at 18% and 28% gain.

Q.5 A container has 50 lit. of juice in it . 5 lit. of juice is taken out and is replaced by 5 lit. water. This process is repeated 4 more times. What is the amount of juice in the container after replacement?

Q.6 A boat covers 32 km upstream and 36 km downstream in 7 hours. Also it covers 40 km upstream and 48 km downstream in 9 hours. Find the speed of the boat in still water and that of the stream.

Q.7 A tank is fitted with 3 taps A,B and C. All the three taps, if opened together, can drain the full tank in $1\frac{1}{2}$ minutes. Taps B and C together take 2 minutes to drain the tank while A and C together take $2\frac{4}{13}$ minutes to drain it. How long will taps A and B together take to drain the tank?

Q.8 A cistern can be filled by an inlet pipe in 20 hours and can be emptied by an outlet pipe in 25 hours. Both the pipes are opened. After 10 hours, the outlet pipe is closed, find the total time taken to fill the tank.

Q.9 In a 1000 m race , A, B and C get the gold, silver and bronze medals, respectively. If A beats B by 100 meters and B beats C by 100 meters , then by how many meters does A beats C?

Q.10 A runs 3 times faster then B. If A gives B a start of 40 meters, how far must goal on the race course be so that A and B reach the goal at the same time?