**Solution TD1 Machinisme agricole : Le moteur Diesel**

**Exercice1**

Réserve de couple

 $\%RC=\frac{Cmax-Cnom}{Cnom}\*100$ $\%RC=\frac{390-300}{300}\*100$ = 30%

Plage d’utilisation

PU = Nnom – Nmax PU = 2300 – 1600 = 700 tr/mn

**Exercice 2**

N = 4500 tr/mn, P = 90 ch = 66195 Watts

P = C \* 2πN/60

C = 60P/2πN

C = 140,54 Nm

**Exercice 3**

C = 200mm = 2dm, D = 140mm = 1,4dm, n=4 (1litre = 1 dm3)

Vt = V \*n

V = π D2/4 \* C V = 3,07 dm3

Vt = 3,07 \* 4 = 12,28 l

2. v = 20mm3 = 0,2\* 10-3 l, V = 3,07 l

ρ = V+v/v = 3,07+ 0,0002/0,0002 = 15351

**Exercice 4**

D = 160mm = 1,6 dm, C = 240mm = 2,4 dm, n = 4, Nnom = 2400 tr/mn, Nmax = 1500 tr/mn

Vt = V\*n

V = π D2/4 \* C V = 4,82 l

Vt = 4,82\*4 = 19,28 l

PU = Nnom – Nmax = 2400 – 1500 = 900 tr/mn

ρ = V+v/v , ρv = V+v, ρv – v = V, v(ρ – 1) = V, v = V/ ρ – 1

v= 4,82/24 = 0,2 l