

BAK Assessment Module 11b.
PERFORMANCE 2- "P" CHARTS (WORKING)

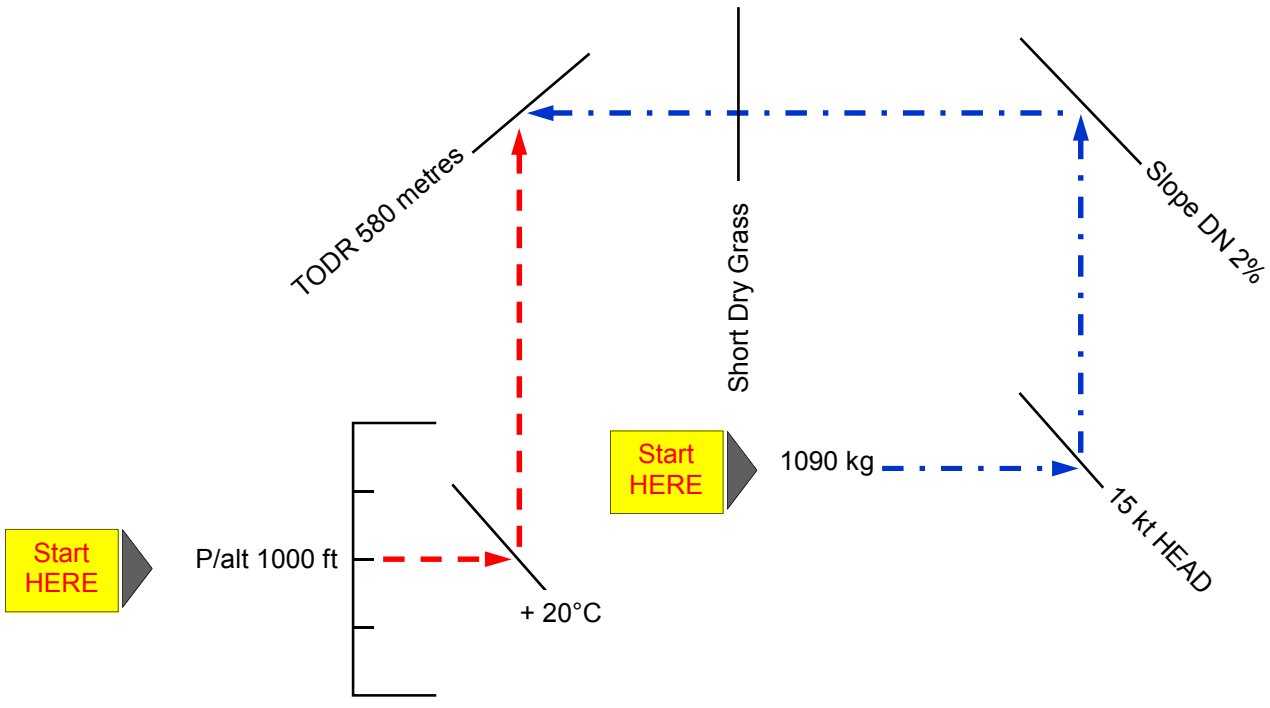
Q1.

(3 marks)

Refer takeoff weight chart fig 3 in the RPL, PPL & CPL (Aeroplane) Workbook Version 3 - 02 December 2021 .

Given:
Aerodrome elevation: 1150 ft AMSL.
QNH: 1018 hPa.
Ambient temperature: +20°C.
Flap: 10 degrees.
RWY slope: 2% DOWN.
Wind component: 15 kt HEAD.
Takeoff weight: Maximum.
Surface: Short dry grass surface

The minimum takeoff distance required (TODR) in this case is closest to ?

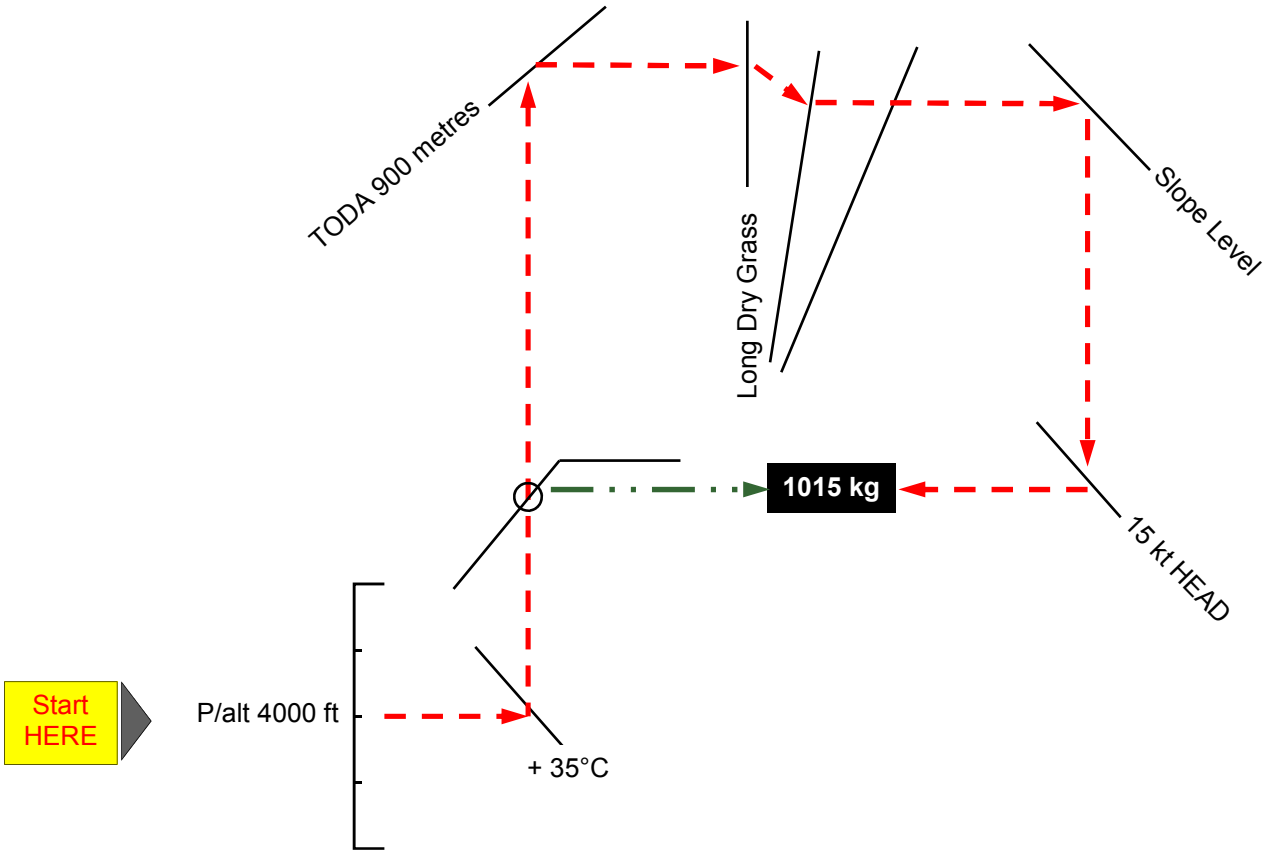


Q2.

(3 marks)

Refer takeoff weight chart fig 3 in the RPL, PPL & CPL (Aeroplane) Workbook Version 3 - 02 December 2021 .

Given:
Aerodrome elevation 3790 ft amsl. QNH 1006 hPa. Ambient temperature +35°C.
Flap: 10° degrees.
RWY slope: level.
Wind component: 15 kt HEAD.
TODA: 900 m.
Surface: Long dry grass.
The maximum takeoff weight in this case is closest to ?



Use lesser of the runway and climb weight values. In this case the runway limit weight, and climb limit weight are identical being about 1015 kg. Answer !

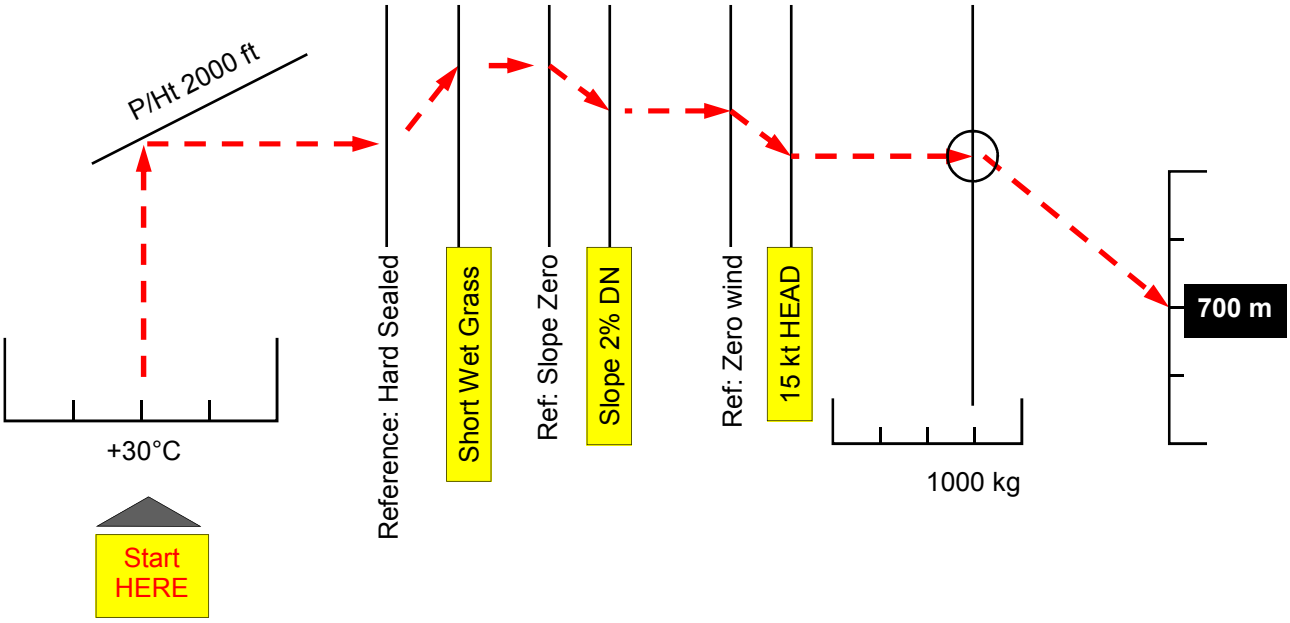
Q3.

(3 marks)

Refer takeoff weight chart fig 5 in the RPL, PPL & CPL (Aeroplane) Workbook Version 3 - 02 December 2021 .

Given:
Aerodrome elevation 1850 ft AMSL. QNH 1008 hPa. Temperature +30°C.
Flap - Zero degrees.
RWY slope 2% Down.
Wind 15 kt HEAD.
Takeoff weight 1000 kg.
Surface: Short wet grass.

The minimum TODR required for takeoff in this case is closest to ?



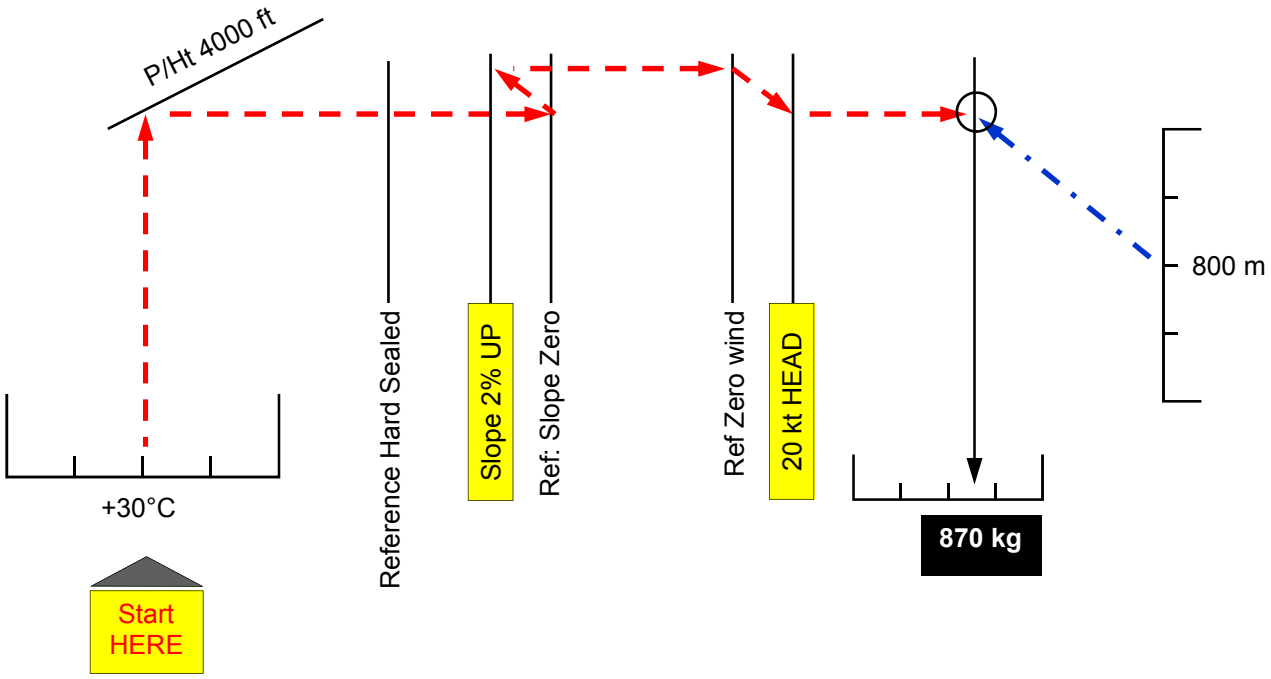
Q4.

(3 marks)

Refer takeoff weight chart fig 5 in the RPL, PPL & CPL (Aeroplane) Workbook Version 3 - 02 December 2021 .

Given:
Aerodrome elevation 3610 ft AMSL. QNH 1000 hPa. Temperature +30°C.
Flap - Zero degrees.
RWY slope 2% UP
Wind 20 kt HEAD. TODA 800 metres.
Surface: Hard sealed.

The maximum takeoff weight that can be scheduled in this case is closest to ?



Note: Always check your climb limit weight. In this case it was NOT limiting !

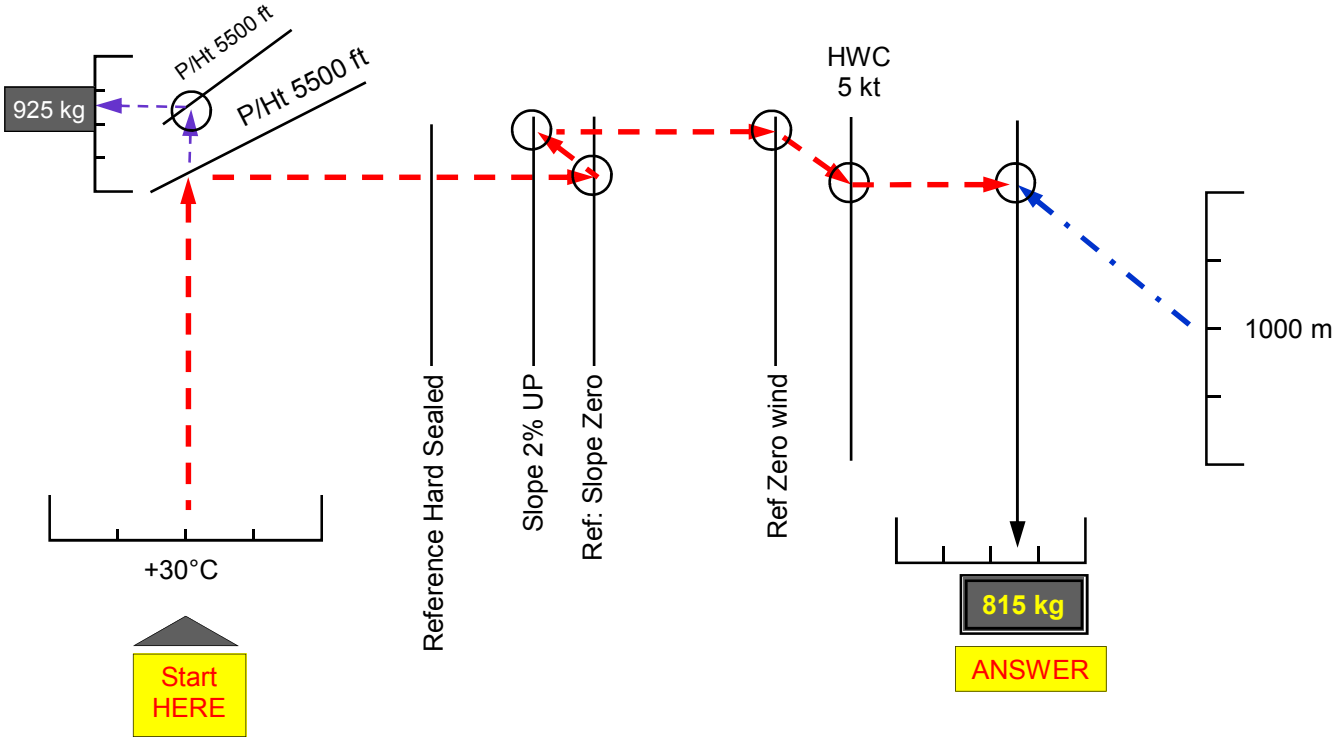
Q8.

(3 marks) *Refer takeoff weight chart fig 5 in the RPL, PPL & CPL (Aeroplane) Workbook Version 3 - 02 December 2021 .*
Given:
Aerodrome elevation 5350 ft AMSL. QNH 1008 hPa. Temperature +30°C. Var 10°E.
Flap - Zero degrees.
Runways available 04/22
TAF Wind 050° 5-10 kt.
RWY slope 2% Down to SW.
TORA 1000 m.
Surface: Hard sealed.

The maximum TOW in this case is closest to ?

Working:
1. You can use wind from a TAF in 'P" charts.
2. Taking off into wind (runway 04), you will be taking off 2 % upslope.
3. Refer diagram below.

NOTE (Important):
1. Where two wind speed values are quoted, always use the **LOWER value for headwind component** (in this case 5 kt). This is being conservative as CASA will be.
2. Where two wind speed values are quoted, always use the **HIGHER value for crosswind component** (in this case 10 kt). This is the worst crosswind case scenario. Crosswind was not an issue here as the max crosswind component is 15 kt for this aircraft (see top l/h corner of the P chart), and the total wind speed is only 10 kt.
3. Do not factor the winds, as the 50% headwind/150% tailwind factors are built into the curved wind lines.
4. Where slope exists, it must be taken into account.



Note: Always check your climb limit weight. In this case it was 925 kg, and therefore the LESS limiting of the two !

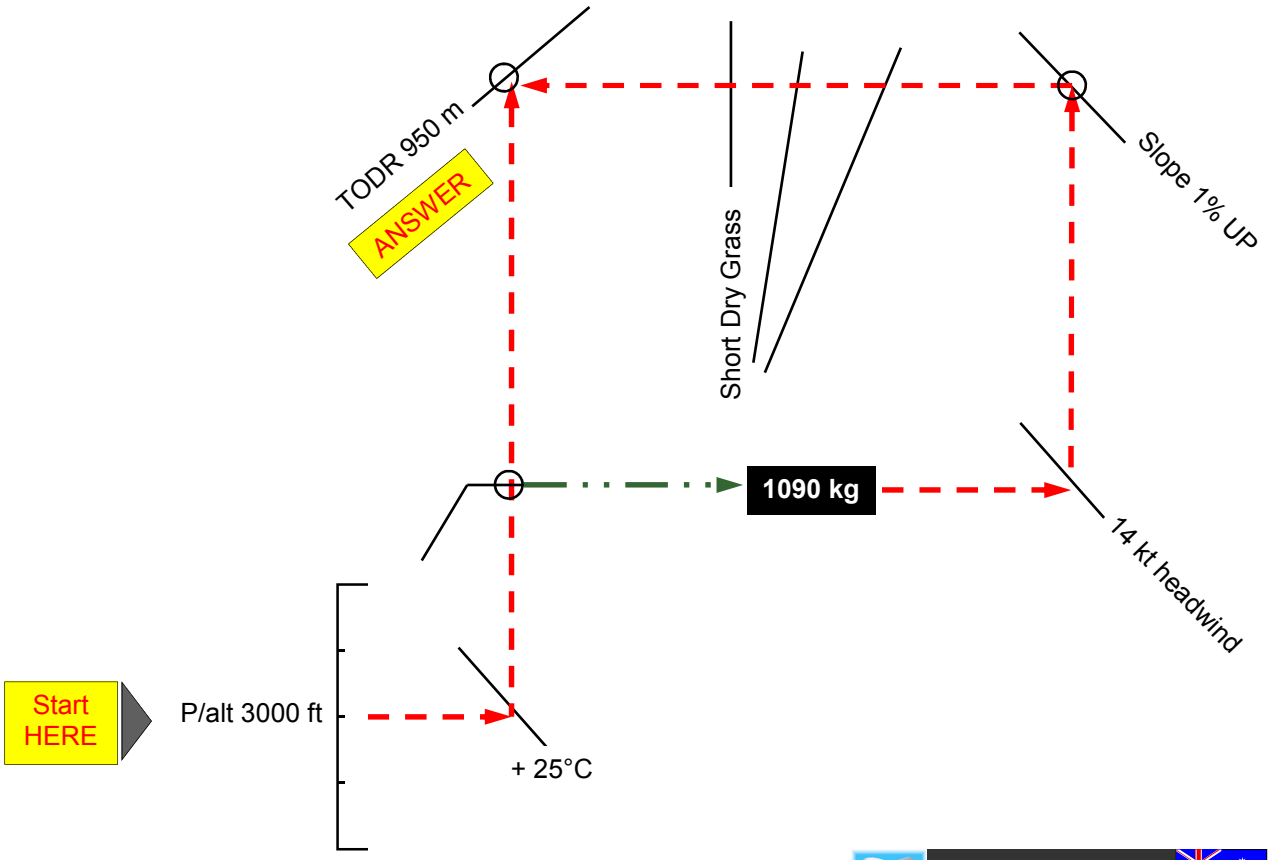
Q9.

(3 marks)
Refer takeoff weight chart fig 3 in the RPL, PPL & CPL (Aeroplane) Workbook Version 3 - 02 December 2021 .
Given:
Aerodrome elevation: 2850 ft AMSL. Var Nil
QNH: 1008 hPa.
Ambient temperature: +25°C.
Flap: 10 degrees.
RWY 18/36
Slope: 1% DOWN to NORTH.
TAF Wind 225°/20 kt
Takeoff weight: Maximum.
Surface: Short dry grass surface.

The minimum takeoff distance required (TODR) in this case is closest to ?

Working:
1. You can use winds from a TAF in 'P" charts.
2. Taking off into wind (runway 18), you will be taking off 1 % upslope.
3. Refer diagram below.

NOTE (Important):
1. Where two wind speed values are quoted, always use the **LOWER value for headwind component** (in this case 5 kt). This is being conservative as CASA will be.
2. Where two wind speed values are quoted, always use the **HIGHER value for crosswind component** (in this case 10 kt). This is the worst crosswind case scenario. Crosswind was not an issue here as the max crosswind component is 14 kt for this aircraft (see top l/h corner of the P chart) using 20 kt as an input.
3. Do not factor the winds, as the 50% headwind/150% tailwind factors are built into the curved wind lines.
4. Where slope exists, it must be taken into account.



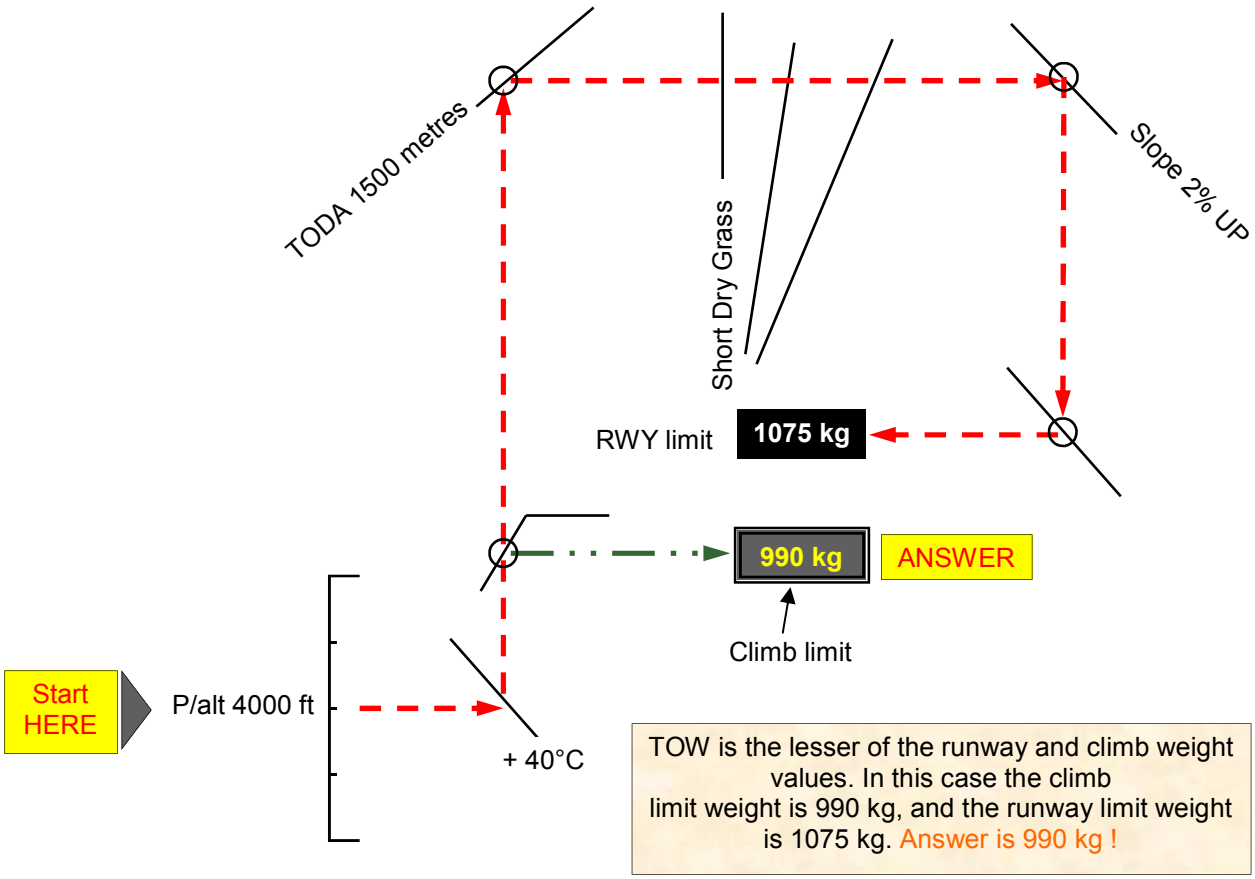
Q10.

(3 marks)
Refer takeoff weight chart fig 3 in the RPL, PPL & CPL (Aeroplane) Workbook Version 3 - 02 December 2021 .
Given:
Aerodrome elevation 3790 ft AMSL. QNH 1006 hPa. Ambient temperature +40°C. Var 10°E
Flap: 10° degrees.
RWY 09/27
RWY slope: 2% UP to West.
TAF Wind 280°/20 kt
TODA: 1500 m.
Surface: Short dry grass.

The maximum takeoff weight in this case is closest to ?

Working:
1. You can use wind from a TAF in 'P" charts.
2. Refer diagram below.

NOTE (Important):
1. Where two wind speed values are quoted, always use the **LOWER value for headwind component** (in this case 5 kt). This is being conservative as CASA will be.
2. Where two wind speed values are quoted, always use the **HIGHER value for crosswind component** (in this case the wind is right down runway 27. Crosswind was not an issue here. Do not factor the winds, as the 50% headwind/150% tailwind factors are built into the curved wind lines.
3. Where slope exists, it must be taken into account. In this case 2% UP.



TOW is the lesser of the runway and climb weight values. In this case the climb limit weight is 990 kg, and the runway limit weight is 1075 kg. Answer is 990 kg !

End of BAK Assessment Module 11b.
PERFORMANCE 2- "P" CHARTS (WORKING)