

❖ Semester Grade point average:

$$SGPA = \frac{\sum(\text{credit} * \text{Grade point})}{\text{Total credits}}$$

❖ Grade Points:

Marks out of 100	Grade points	Grade	Description
85 - 100	8.5 - 10	O+	Outstanding
70 - 84.99	7.0 - 8.49	O	Excellent
60 - 69.99	6.0 - 6.99	A	Very Good
55 - 59.99	5.5 - 5.99	B+	Good
48 - 54.99	4.8 - 5.49	B	Fair
40 - 47.99	4.0 - 4.79	C	Average
30 - 39.99	3.0 - 3.99	D	Dropped
20 - 29.99	2.0 - 2.99	E	
10 - 19.99	1.0 - 1.99	F	
0 - 9.99	0.0 - 0.99	G	

Equivalent percentage Percentage based on SGPA:

$$\text{Equivalent percentage} = SGPA * 10$$

❖ **Cumulative Grade Point Average(CGPA):**

$$\text{CGPA} = \{\text{SGPA (Semester I)} + \text{SGPA (Semester II)} + \text{SGPA (Semester III)} + \text{SGPA (Semester IV)}\} / \text{No. of semester}$$

❖ **Equivalent percentage:**

$$= \text{CGPA} * 10$$

❖ **Award of class based on CGPA:**

CGPA	Grade	Class
$8.5 \leq \text{CGPA} \leq 10$	O+	First Class with Distinction
$7 \leq \text{CGPA} < 8.5$	O	
$6 \leq \text{CGPA} < 7$	A	First Class
$5.5 \leq \text{CGPA} < 6$	B+	Higher Second Class
$4.8 \leq \text{CGPA} < 5.5$	B	Second class
$4 \leq \text{CGPA} < 4.8$	C	Pass Class
$\text{CGPA} < 4$	D	Fail

❖ Example:

✚ First Semester:

Calculation of SGPA:

Course NO	Credit	Marks out of 100	Grade	Grade Point	Credit*Grade point
P1	4	48	B	4.8	19.2
P2	4	47	C	4.7	18.8
P3	4	57	B+	5.7	22.8
P4	4	65	A	6.5	26
P5	4	83	O	8.3	33.2
	20	300			120
		60			6
					60

Conversion of marks in to Grade Point:

➤ For the Course No P1,

$$48 = 48 + 0 = 4.8 + 0 * \left(\frac{0.69}{6.99}\right) = 4.8 + 0 \approx 4.8$$

➤ For the Course No P2

$$47 = 40 + 7 = 4.0 + 7 * \left(\frac{0.79}{7.99}\right) = 4.0 + 0.6921 = 4.6921 \approx 4.7$$

➤ For the Course No P3,

$$57 = 55 + 2 = 5.5 + 2 * \left(\frac{0.49}{4.99}\right) = 5.5 + 0.1963 = 5.6963 \approx 5.7$$

➤ For the Course No P4,

$$65 = 60 + 5 = 6.0 + 5 * \left(\frac{0.99}{9.99}\right) = 6.0 + 0.4954 = 6.4954 \approx 6.5$$

➤ For the Course No P5,

$$83 = 70 + 13 = 7.0 + 13 * \left(\frac{1.49}{14.99}\right) = 7.0 + 1.2921 = 8.2921 \approx 8.3$$

Now, SGPA is,

$$SGPA = \frac{\sum(\text{credit} * \text{Grade point})}{\text{Total credits}}$$

$$SGPA = \frac{120}{20} = 6.00$$

$$\text{Equivalent percentage} = SGPA * 10$$

$$\text{Equivalent percentage} = 6.0 * 10 = 60\%$$

✚ Second Semester:

Course NO	Credit	Marks out of 100	Grade	Grade Point	Credit*Grade point
P1	4	88	O+	8.8	35.2
P2	4	78	O	7.8	31.2
P3	4	68	A	6.8	27.2
P4	4	58	B+	5.8	23.2
P5	4	48	B	4.8	19.2
	20	340			136
		68			6.8
					68

$$SGPA = \frac{136}{20} = 6.8$$

$$\text{Equivalent percentage} = SGPA * 10$$

$$\text{Equivalent percentage} = 6.8 * 10 = 68\%$$

✚ Third Semester:

Course NO	Credit	Marks out of 100	Grade	Grade Point	Credit*Grade point
P1	4	89	O+	8.9	35.6
P2	4	99	O+	9.9	39.6
P3	4	87	O+	8.7	34.8
P4	4	74	O	7.4	29.6
P5	4	83	O	8.3	33.2
	20	432			172.8
		86.4			8.64
					86.4

$$\text{SGPA} = \frac{172.8}{20} = 8.64$$

Equivalent percentage = SGPA * 10

$$\text{Equivalent percentage} = 8.64 * 10 = 86.4\%$$

❖ Fourth Semester:

Course NO	Credit	Marks out of 100	Grade	Grade Point	Credit*Grade point
P1	4	65	A	6.5	26
P2	4	55	B+	5.5	22
P3	4	66	A	6.6	26.4
P4	4	78	O	7.8	31.2
P5	4	91	O+	9.1	36.4
	20	355			142
		71			7.1
					71

$$\text{SGPA} = \frac{142}{20} = 7.10$$

Equivalent percentage = SGPA * 10

$$\text{Equivalent percentage} = 7.10 * 10 = 71\%$$

❖ Cumulative Grade Point Average(CGPA):

CGPA = {SGPA (Semester I) + SGPA (Semester II) + SGPA (Semester III) + SGPA (Semester IV)} / No. of semester

$$\text{CGPA} = \frac{6.00+6.80+8.64+7.10}{4}$$

$$\text{CGPA} = 7.135$$

Equivalent percentage from CGPA:

Equivalent percentage = CGPA * 10

$$= 7.135 * 10$$

$$\text{Equivalent percentage} = 71.35\%$$

✓ Award of class based on CGPA:

CGPA = 7.135

Grade = O

Class = First Class with Distinction.