

Lampiran 1

DAFTAR PESERTA DIDIK

KELAS X1 IPA-1

No	Nama	Kode Narasumber
1.	Achmad Isnaini	W/AI
2.	Afif Zamroni	W/AZ
3.	Aifa Birrul Baqi	W/ABB
4.	Aisna Devy Inggria Sukma	W/ADIS
5.	Alizza Qathrunnada	W/AQ
6.	Anisssa Nur Fajrianti	W/ANF
7.	Athok Mahfud	W/AM
8.	Dedy Risdyanto	W/DR
9.	Dewi Suharningsih	W/DS
10.	Dwi Muryani	W/DM
11.	Eni Puji Astuti	W/EPA
12.	Fira Nadliratul A.	W/FNA
13.	Frisilia Febriyanti	W/FF
14.	Icha Sabella	W/IS
15.	Ilham Wiji P.	W/IWP
16.	Indah	W/I
17.	Itsna Ulin Ni'mah	W/IUN
18.	Lidia Windriarti	W/LW
19.	Lutfia Dwi Rahmawati	W/LDR
20.	Miftachul Istikomah	W/MI
21.	Mita Nia Irsyada	W/MNI
22.	Moh.Misbahul Umam	W/MMU
23.	Muh.Syarif H.	W/MSH
24.	M.Dian Aris Setiawan	W/MDAS
25.	Muhammad Romadloni	W/MR
26.	Mushthofiyatul K.	W/MK
27.	Novi Muanadah	W/NM
28.	Rahman Dwi Narso	W/RDN
29.	Siti Efrinia Rosita	W/SER
30.	Tri Ulfa Setyo Rini	W/TUSR
31.	Uswatun Chasanah	W/UC
32.	Wahyu Hidayat S.	W/WHs

**Data Observasi Keterampilan Proses Sains Peserta Didik pada
Praktikum Asam Basa dan Larutan Penyangga**

1. Kemampuan Mengobservasi

No	Nama	Kemampuan Mengobservasi			
		Asam Basa			Larutan Penyangga
		I	II	III	I
1.	Achmad Isnaini	4	4	4	-
2.	Afif Zamroni	4	3	2	4
3.	Aifa Birrul Baqi	4	4	4	4
4.	Aisna Devy Inggria Sukma	4	4	4	4
5.	Alizza Qathrunnada	4	4	4	4
6.	Anisssa Nur Fajrianti	4	4	4	4
7.	Athok Mahfud	4	3	3	4
8.	Dedy Risdyanto	4	3	3	3
9.	Dewi Suharningsih	4	4	4	4
10.	Dwi Muryani	4	4	4	4
11.	Eni Puji Astuti	4	4	3	3
12.	Fira Nadliratul A.	4	4	4	4
13.	Frisilia Febriyanti	4	3	4	4
14.	Icha Sabella	4	4	4	4
15.	Ilham Wiji P.	4	3	2	4
16.	Indah	4	4	4	4
17.	Itsna Ulin Ni'mah	4	4	4	4
18.	Lidia Windriarti	4	4	4	4
19.	Lutfia Dwi Rahmawati	4	3	4	4
20.	Miftachul Istikomah	4	4	3	3
21.	Mita Nia Irsyada	4	4	4	4
22.	Moh.Misbahul Umam	2	2	2	2
23.	Muh.Syarif H.	2	2	2	2

24.	M.Dian Aris Setiawan	3	3	2	4
25.	Muhammad Romadloni	3	3	2	4
26.	Mushthofiyatul K.	4	4	4	4
27.	Novi Muanadah	4	4	4	-
28.	Rahman Dwi Narso	-	-	-	4
29.	Siti Efrinia Rosita	3	4	4	4
30.	Tri Ulfa Setyo Rini	4	4	4	4
31.	Uswatun Chasanah	-	-	-	4
32.	Wahyu Hidayat S.	4	3	2	4
Jumlah		113	107	102	113

2. Kemampuan Mengklasifikasikan

No	Nama	Kemampuan Mengklasifikasi			
		Asam Basa			Larutan Penyangga
		I	II	III	I
1.	Achmad Isnaini	4	1	4	-
2.	Afif Zamroni	4	1	4	1
3.	Aifa Birrul Baqi	4	1	4	4
4.	Aisna Devy Inggria Sukma	4	1	4	4
5.	Alizza Qathrunnada	4	1	4	4
6.	Anisssa Nur Fajrianti	4	1	4	4
7.	Athok Mahfud	4	4	4	2
8.	Dedy Risdyanto	4	1	4	2
9.	Dewi Suharningsih	4	4	4	2
10.	Dwi Muryani	4	4	4	2
11.	Eni Puji Astuti	4	4	4	2
12.	Fira Nadliratul A.	4	4	4	1
13.	Frisilia Febriyanti	4	3	4	4
14.	Icha Sabella	4	2	4	4

15.	Ilham Wiji P.	4	1	4	4
16.	Indah	4	3	4	4
17.	Itsna Ulin Ni'mah	4	3	4	4
18.	Lidia Windriarti	4	3	4	4
19.	Lutfia Dwi Rahmawati	4	3	4	4
20.	Miftachul Istikomah	4	3	4	4
21.	Mita Nia Irsyada	4	3	4	4
22.	Moh.Misbahul Umam	4	2	4	4
23.	Muh.Syarif H.	4	2	4	4
24.	M.Dian Aris Setiawan	4	1	4	1
25.	Muhammad Romadloni	4	1	4	1
26.	Mushthofiyatul K.	4	4	4	1
27.	Novi Muanadah	4	4	4	-
28.	Rahman Dwi Narso	-	-	-	1
29.	Siti Efrinia Rosita	4	4	4	2
30.	Tri Ulfa Setyo Rini	4	4	4	1
31.	Uswatun Chasanah	-	-	-	2
32.	Wahyu Hidayat S.	2	1	4	2
Jumlah		118	74	120	83

3. Kemampuan Menggunakan Alat dan Bahan

No	Nama	Kemampuan Menggunakan Alat dan Bahan			
		Asam Basa		Larutan Penyangga	
		I	II	I	II
1.	Achmad Isnaini	2	2	-	-
2.	Afif Zamroni	2	2	2	2
3.	Aifa Birrul Baqi	2	2	4	3
4.	Aisna Devy Inggria Sukma	4	4	4	4
5.	Alizza Qathrunnada	4	4	4	4

6.	Anisssa Nur Fajrianti	4	4	4	4
7.	Athok Mahfud	3	2	4	3
8.	Dedy Risdyanto	3	2	4	3
9.	Dewi Suharningsih	4	4	4	4
10.	Dwi Muryani	4	3	4	4
11.	Eni Puji Astuti	3	3	4	3
12.	Fira Nadliratul A.	4	4	4	4
13.	Frisilia Febriyanti	4	4	4	4
14.	Icha Sabella	4	4	4	4
15.	Ilham Wiji P.	4	4	4	4
16.	Indah	4	4	4	4
17.	Itsna Ulin Ni'mah	4	4	4	4
18.	Lidia Windriarti	4	4	4	4
19.	Lutfia Dwi Rahmawati	4	4	4	4
20.	Miftachul Istikomah	4	4	4	4
21.	Mita Nia Irsyada	4	4	4	4
22.	Moh.Misbahul Umam	2	2	3	3
23.	Muh.Syarif H.	2	2	1	2
24.	M.Dian Aris Setiawan	2	2	3	2
25.	Muhammad Romadloni	2	2	3	2
26.	Mushthofiyatul K.	4	4	4	4
27.	Novi Muanadah	4	4	-	-
28.	Rahman Dwi Narso	-	-	4	4
29.	Siti Efrinia Rosita	4	4	4	4
30.	Tri Ulfa Setyo Rini	4	4	4	3
31.	Uswatun Chasanah	-	-	4	4
32.	Wahyu Hidayat S.	2	2	2	2
Jumlah		101	98	110	104

4. Kemampuan Mengukur

No	Nama	Kemampuan Mengukur			
		Asam Basa		Larutan Penyangga	
		I	II	I	II
1.	Achmad Isnaini	1	2	-	-
2.	Afif Zamroni	1	2	2	2
3.	Aifa Birrul Baqi	1	2	3	3
4.	Aisna Devy Inggria Sukma	1	4	3	4
5.	Alizza Qathrunnada	1	4	3	4
6.	Anisssa Nur Fajrianti	1	4	3	4
7.	Athok Mahfud	1	2	1	3
8.	Dedy Risdyanto	1	2	1	3
9.	Dewi Suharningsih	1	3	1	3
10.	Dwi Muryani	1	3	1	4
11.	Eni Puji Astuti	1	3	1	4
12.	Fira Nadliratul A.	1	3	1	4
13.	Frisilia Febriyanti	1	4	3	3
14.	Icha Sabella	1	4	3	2
15.	Ilham Wiji P.	1	3	3	2
16.	Indah	1	4	3	3
17.	Itsna Ulin Ni'mah	1	4	3	2
18.	Lidia Windriarti	1	4	3	3
19.	Lutfia Dwi Rahmawati	1	4	3	3
20.	Miftachul Istikomah	1	4	3	3
21.	Mita Nia Irsyada	1	4	3	3
22.	Moh.Misbahul Umam	1	2	2	2
23.	Muh.Syarif H.	1	2	1	1
24.	M.Dian Aris Setiawan	1	2	2	2
25.	Muhammad Romadloni	1	2	2	3
26.	Mushthofiyatul K.	1	4	3	3

27.	Novi Muanadah	1	4	-	-
28.	Rahman Dwi Narso	-	-	3	3
29.	Siti Efrinia Rosita	1	4	3	4
30.	Tri Ulfa Setyo Rini	1	4	3	4
31.	Uswatun Chasanah	-	-	1	3
32.	Wahyu Hidayat S.	1	2	2	2
Jumlah		30	95	69	89

5. Kemampuan Menginterpretasi Data

No	Nama	Kemampuan Menginterpretasi Data			
		Asam Basa		Larutan Penyangga	
		I	II	I	II
1.	Achmad Isnaini	3	4	-	-
2.	Afif Zamroni	2	4	1	1
3.	Aifa Birrul Baqi	3	4	3	4
4.	Aisna Devy Inggria Sukma	3	4	3	4
5.	Alizza Qathrunnada	3	4	3	4
6.	Anisssa Nur Fajrianti	3	4	3	4
7.	Athok Mahfud	2	4	2	3
8.	Dedy Risdyanto	2	4	2	3
9.	Dewi Suharningsih	2	4	2	3
10.	Dwi Muryani	2	4	2	3
11.	Eni Puji Astuti	2	4	2	3
12.	Fira Nadliratul A.	2	4	1	3
13.	Frisilia Febriyanti	3	4	2	4
14.	Icha Sabella	3	4	2	4
15.	Ilham Wiji P.	2	4	2	4
16.	Indah	3	4	2	4
17.	Itsna Ulin Ni'mah	3	4	2	4

18.	Lidia Windriarti	3	4	2	4
19.	Lutfia Dwi Rahmawati	2	4	2	4
20.	Miftachul Istikomah	2	4	3	4
21.	Mita Nia Irsyada	2	4	3	4
22.	Moh.Misbahul Umam	2	1	3	1
23.	Muh.Syarif H.	2	1	3	1
24.	M.Dian Aris Setiawan	2	4	1	1
25.	Muhammad Romadloni	2	4	1	1
26.	Mushthofiyatul K.	2	4	1	4
27.	Novi Muanadah	2	4	-	-
28.	Rahman Dwi Narso	-	-	1	4
29.	Siti Efrinia Rosita	2	4	2	4
30.	Tri Ulfa Setyo Rini	2	4	1	4
31.	Uswatun Chasanah	-	-	2	1
32.	Wahyu Hidayat S.	2	4	2	1
Jumlah		70	114	61	93

6. Kemampuan Mengkomunikasikan

No	Nama	Kemampuan Mengkomunikasikan							
		Asam Basa				Larutan Penyangga			
		I	II	III	IV	I	II	III	IV
1.	Achmad Isnaini	4	3	3	3	-	-	-	-
2.	Afif Zamroni	1	3	2	3	1	1	2	1
3.	Aifa Birrul Baqi	4	3	3	3	4	3	3	3
4.	Aisna Devy Inggria Sukma	4	3	3	3	4	3	3	3
5.	Alizza Qathrunnada	4	3	3	3	4	3	3	3
6.	Anisssa Nur Fajrianti	4	3	3	3	4	3	3	3
7.	Athok Mahfud	4	3	3	3	1	0	1	0
8.	Dedy Risdyanto	4	1	2	1	1	0	1	0

9.	Dewi Suharningsih	4	3	3	3	4	3	2	3
10.	Dwi Muryani	4	3	3	3	4	3	3	3
11.	Eni Puji Astuti	4	3	3	3	4	3	2	3
12.	Fira Nadliratul A.	4	3	3	3	4	3	2	3
13.	Frisilia Febriyanti	4	3	3	3	4	3	3	3
14.	Icha Sabella	4	3	2	3	4	3	2	3
15.	Ilham Wiji P.	2	3	2	3	1	1	2	3
16.	Indah	4	3	3	3	4	3	3	3
17.	Itsna Ulin Ni'mah	4	3	3	3	4	3	2	3
18.	Lidia Windriarti	4	3	3	3	4	3	3	3
19.	Lutfia Dwi Rahmawati	4	3	3	3	4	3	2	3
20.	Miftachul Istikomah	4	3	2	3	4	3	2	3
21.	Mita Nia Irsyada	4	3	3	3	4	3	3	3
22.	Moh.Misbahul Umam	1	1	1	1	1	0	1	0
23.	Muh.Syarif H.	1	1	1	1	1	0	1	0
24.	M.Dian Aris Setiawan	4	0	1	0	1	0	1	0
25.	Muhammad Romadloni	4	0	1	0	1	0	1	0
26.	Mushtofiyatul K.	4	0	1	0	4	0	1	0
27.	Novi Muanadah	4	0	1	0	-	-	-	-
28.	Rahman Dwi Narso	-	-	-	-	4	0	1	0
29.	Siti Efrinia Rosita	4	3	3	3	4	3	2	3
30.	Tri Ulfa Setyo Rini	4	3	3	3	4	3	2	3
31.	Uswatun Chasanah	-	-	-	-	4	3	2	3
32.	Wahyu Hidayat S.	1	3	2	3	1	3	2	3
Jumlah		106	72	72	72	93	62	61	64

7. Kemampuan Menyimpulkan

No	Nama	Kemampuan Menyimpulkan	
		Asam Basa	Larutan Penyangga
		I	I
1.	Achmad Isnaini	3	0
2.	Afif Zamroni	3	1
3.	Aifa Birrul Baqi	1	4
4.	Aisna Devy Inggria Sukma	3	4
5.	Alizza Qathrunnada	1	4
6.	Anisssa Nur Fajrianti	3	4
7.	Athok Mahfud	3	0
8.	Dedy Risdyanto	1	0
9.	Dewi Suharningsih	3	3
10.	Dwi Muryani	3	3
11.	Eni Puji Astuti	3	3
12.	Fira Nadliratul A.	3	3
13.	Frisilia Febriyanti	3	2
14.	Icha Sabella	2	1
15.	Ilham Wiji P.	1	1
16.	Indah	3	1
17.	Itsna Ulin Ni'mah	4	3
18.	Lidia Windriarti	3	3
19.	Lutfia Dwi Rahmawati	2	3
20.	Miftachul Istikomah	3	3
21.	Mita Nia Irsyada	3	3
22.	Moh.Misbahul Umam	1	0
23.	Muh.Syarif H.	1	0
24.	M.Dian Aris Setiawan	0	0
25.	Muhammad Romadloni	0	0
26.	Mushthofiyatul K.	0	0

27.	Novi Muanadah	0	0
28.	Rahman Dwi Narso	0	0
29.	Siti Efrinia Rosita	3	3
30.	Tri Ulfa Setyo Rini	3	3
31.	Uswatun Chasanah	0	1
32.	Wahyu Hidayat S.	3	1
Jumlah		65	57

Lampiran 2

Konversi Skor Penilaian Lembar Observasi Keterampilan Proses Sains dari Tiap Aspek pada Praktikum Asam Basa

1. Aspek Mengamati
 - a. Jumlah indikator = 3 butir
 - b. Skor tertinggi = 4 x 3 butir = 12
 - c. Skor terendah = 1 x 3 butir = 3
 - d. Rerata skor ideal ($\bar{X}i$) = $\frac{1}{2}(\text{skor tertinggi} + \text{skor terendah})$
$$= \frac{1}{2}(12 + 3)$$
$$= \frac{1}{2}(15) = 7,5$$
 - e. Simpangan Baku ideal (SBi) = $\frac{1}{6}(\text{skor tertinggi} - \text{skor terendah})$
$$= \frac{1}{6}(12 - 3)$$
$$= \frac{1}{6}(9) = 1,5$$
 - f. \bar{X} (rata-rata) = $\frac{\text{Total skor}}{n}$
$$= \frac{113+107+102}{32}$$
$$= \frac{322}{32} = 10,06$$
 - g. Persentase skor = $\frac{\bar{X}(\text{rata-rata})}{\text{Skor tertinggi}} \times 100\%$
$$= \frac{10,06}{12} \times 100\% = 83,8$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 7,5 + 1,80 \times 1,5$	>85%	Sangat Baik

$X > 10,2$		
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $7,5 + 0,60 \times 1,5 < X \leq 7,5 + 1,80 \times 1,5$ $8,4 < X \leq 10,2$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $7,5 - 0,60 \times 1,5 < X \leq 7,5 + 0,60 \times 1,5$ $6,6 < X \leq 8,4$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $7,5 - 1,80 \times 1,5 < X \leq 7,5 - 0,60 \times 1,5$ $4,8 < X \leq 6,6$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 7,5 - 1,80 \times 1,5$ $X \leq 4,8$	$\leq 40\%$	Sangat Kurang

2. Aspek Mengklasifikasi

- a. Jumlah indikator = 3 butir
b. Skor tertinggi = 4×3 butir = 12
c. Skor terendah = 1×3 butir = 3
d. Rerata skor ideal ($\bar{X}i$) = $\frac{1}{2}$ (skor tertinggi + skor terendah)

$$= \frac{1}{2}(12 + 3)$$

$$= \frac{1}{2}(15) = 7,5$$

- e. Simpangan Baku ideal (SBi) = $\frac{1}{6}$ (skor tertinggi – skor terendah)

$$= \frac{1}{6}(12 - 3)$$

$$= \frac{1}{6}(9) = 1,5$$

- f. \bar{X} (rata-rata) = $\frac{\text{Total skor}}{n}$

$$= \frac{118+74+120}{32}$$

$$= \frac{312}{32} = 9,75$$

- g. Persentase skor = $\frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$
= $\frac{9,75}{12} \times 100\% = 81,25\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 10,2$	$>85\%$	Sangat Baik
$8,4 < X \leq 10,2$	$>70-85\%$	Baik
$6,6 < X \leq 8,4$	$>55-70\%$	Cukup
$4,8 < X \leq 6,6$	$>40-55\%$	Kurang
$X \leq 4,8$	$\leq 40\%$	Sangat Kurang

3. Aspek Menggunakan Alat dan Bahan

- a. Jumlah indikator = 2 butir
 b. Skor tertinggi = 4×2 butir = 8
 c. Skor terendah = 1×2 butir = 2
 d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}$ (skor tertinggi + skor terendah)

$$= \frac{1}{2}(8 + 2)$$

$$= \frac{1}{2}(10) = 5$$

- e. Simpangan Baku ideal ($SB\hat{i}$) = $\frac{1}{6}$ (skor tertinggi – skor terendah)

$$= \frac{1}{6}(8 - 2)$$

$$= \frac{1}{6}(6) = 1$$

- f. \bar{X} (rata-rata) = $\frac{\text{Total skor}}{n}$

$$= \frac{101+98}{32}$$

$$= \frac{199}{32} = 6,22$$

- g. Persentase skor = $\frac{\bar{X}(\text{rata-rata})}{\text{Skor tertinggi}} \times 100\%$

$$= \frac{6,22}{8} \times 100\% = 77,75\%$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 5 + 1,80 \times 1$ $X > 6,8$	>85%	Sangat Baik
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $5 + 0,60 \times 1 < X \leq 5 + 1,80 \times 1$ $5,6 < X \leq 6,8$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $5 - 0,60 \times 1 < X \leq 5 + 0,60 \times 1$ $4,4 < X \leq 5,6$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $5 - 1,80 \times 1 < X \leq 5 - 0,60 \times 1$ $3,2 < X \leq 4,4$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 5 - 1,80 \times 1$ $X \leq 3,2$	$\leq 40\%$	Sangat Kurang

4. Aspek Mengukur

- a. Jumlah indikator = 2 butir
 b. Skor tertinggi = 4×2 butir = 8
 c. Skor terendah = 1×2 butir = 2
 d. Rerata skor ideal ($\bar{X}i$) = $\frac{1}{2}$ (skor tertinggi + skor terendah)

$$= \frac{1}{2}(8 + 2)$$

$$= \frac{1}{2}(10) = 5$$

- e. Simpangan Baku ideal (SBi) = $\frac{1}{6}$ (skor tertinggi – skor terendah)

$$= \frac{1}{6}(8 - 2)$$

$$= \frac{1}{6}(6) = 1$$

- f. \bar{X} (rata-rata)
- $$= \frac{\text{Total skor}}{n}$$
- $$= \frac{30+95}{32}$$
- $$= \frac{125}{32} = 3,90$$

$$\begin{aligned}
 \text{g. Persentase skor} &= \frac{\bar{X}(\text{rata-rata})}{\text{Skor tertinggi}} \times 100\% \\
 &= \frac{3,90}{8} \times 100\% = 48,75\%
 \end{aligned}$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 6,8$	$>85\%$	Sangat Baik
$5,6 < X \leq 6,8$	$>70-85\%$	Baik
$4,4 < X \leq 5,6$	$>55-70\%$	Cukup
$3,2 < X \leq 4,4$	$>40-55\%$	Kurang
$X \leq 3,2$	$\leq 40\%$	Sangat Kurang

5. Aspek Menginterpretasi Data

- a. Jumlah indikator = 2 butir
 b. Skor tertinggi = 4×2 butir = 8
 c. Skor terendah = 1×2 butir = 2
 d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}(\text{skor tertinggi} + \text{skor terendah})$

$$= \frac{1}{2}(8 + 2)$$

$$= \frac{1}{2}(10) = 5$$

- e. Simpangan Baku ideal ($SB\hat{i}$) = $\frac{1}{6}(\text{skor tertinggi} - \text{skor terendah})$

$$= \frac{1}{6}(8 - 2)$$

$$= \frac{1}{6}(6) = 1$$

f. \bar{X} (rata-rata)

$$\begin{aligned}
 &= \frac{\text{Total skor}}{n} \\
 &= \frac{70+114}{32} \\
 &= \frac{184}{32} = 5,75
 \end{aligned}$$

g. Persentase skor

$$\begin{aligned}
 &= \frac{\bar{X}(\text{rata-rata})}{\text{Skor tertinggi}} \times 100\% \\
 &= \frac{5,75}{8} \times 100\% = 71,87\%
 \end{aligned}$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 6,8$	$>85\%$	Sangat Baik
$5,6 < X \leq 6,8$	$>70-85\%$	Baik
$4,4 < X \leq 5,6$	$>55-70\%$	Cukup
$3,2 < X \leq 4,4$	$>40-55\%$	Kurang
$X \leq 3,2$	$\leq 40\%$	Sangat Kurang

6. Aspek Mengkomunikasikan

- a. Jumlah indikator = 4 butir
 b. Skor tertinggi = 4×4 butir = 16
 c. Skor terendah = 1×4 butir = 4
 d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}(\text{skor tertinggi} + \text{skor terendah})$

$$= \frac{1}{2}(16 + 4)$$

$$= \frac{1}{2}(20) = 10$$

- e. Simpangan Baku ideal (SBI) = $\frac{1}{6}(\text{skor tertinggi} - \text{skor terendah})$

$$= \frac{1}{6}(16 - 4)$$

$$= \frac{1}{6}(12) = 2$$

- f. \bar{X} (rata-rata) = $\frac{\text{Total skor}}{n}$

$$= \frac{106+72+72+72}{32}$$

$$= \frac{322}{32} = 10,6$$

- g. Persentase skor = $\frac{\bar{X}(\text{rata-rata})}{\text{Skor tertinggi}} \times 100\%$
 = $\frac{10,6}{16} \times 100\% = 66,25\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 10 + 1,80 \times 2$ $X > 13,6$	>85%	Sangat Baik
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $10 + 0,60 \times 2 < X \leq 10 + 1,80 \times 2$ $11,2 < X \leq 13,6$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $10 - 0,60 \times 2 < X \leq 10 + 0,60 \times 2$ $8,8 < X \leq 11,2$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $10 - 1,80 \times 2 < X \leq 10 - 0,60 \times 2$ $6,4 < X \leq 8,8$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 10 - 1,80 \times 2$ $X \leq 6,4$	$\leq 40\%$	Sangat Kurang

7. Aspek Menyimpulkan

- a. Jumlah indikator = 1 butir
 b. Skor tertinggi = 4
 c. Skor terendah = 1
 d. Rerata skor ideal ($\bar{X}i$) = $\frac{1}{2}$ (skor tertinggi + skor terendah)

$$= \frac{1}{2}(4 + 1)$$

$$= \frac{1}{2}(5) = 2,5$$

- e. Simpangan Baku ideal (SBi) = $\frac{1}{6}$ (skor tertinggi – skor terendah)

$$= \frac{1}{6}(4 - 1)$$

$$= \frac{1}{6}(3) = 0,5$$

- f. \bar{X} (rata-rata) = $\frac{\text{Total skor}}{n}$

$$= \frac{65}{32} = 2,03$$

$$\begin{aligned}
 \text{g. Persentase skor} &= \frac{\bar{X}(\text{rata-rata})}{\text{Skor tertinggi}} \times 100\% \\
 &= \frac{2,03}{4} \times 100\% = 50,75\%
 \end{aligned}$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 2,5 + 1,80 \times 0,5$ $X > 3,4$	>85%	Sangat Baik
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $2,5 + 0,60 \times 0,5 < X \leq 2,5 + 1,80 \times 0,5$ $2,8 < X \leq 3,4$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $2,5 - 0,60 \times 0,5 < X \leq 2,5 + 0,60 \times 0,5$ $2,2 < X \leq 2,8$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $2,5 - 1,80 \times 0,5 < X \leq 2,5 - 0,60 \times 0,5$ $1,6 < X \leq 2,2$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 2,5 - 1,80 \times 0,5$ $X \leq 1,6$	$\leq 40\%$	Sangat Kurang

Konversi Skor Penilaian Lembar Observasi Keterampilan Proses Sains dari Tiap Indikator Aspek pada Praktikum Asam Basa

Secara Umum (Per Indikator) :

- a. Jumlah indikator = 1 butir
 b. Skor tertinggi = 4
 c. Skor terendah = 1
 d. Rerata skor ideal ($\bar{X}i$) = $\frac{1}{2}(\text{skor tertinggi} + \text{skor terendah})$

$$= \frac{1}{2}(4 + 1)$$

$$= \frac{1}{2}(5) = 2,5$$

- e. Simpangan Baku ideal (SBi) = $\frac{1}{6}(\text{skor tertinggi} - \text{skor terendah})$

$$= \frac{1}{6}(4 - 1)$$

$$= \frac{1}{6}(3) = 0,5$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 2,5 + 1,80 \times 0,5$ $X > 3,4$	>85%	Sangat Baik
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $2,5 + 0,60 \times 0,5 < X \leq 2,5 + 1,80 \times 0,5$ $2,8 < X \leq 3,4$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $2,5 - 0,60 \times 0,5 < X \leq 2,5 + 0,60 \times 0,5$ $2,2 < X \leq 2,8$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $2,5 - 1,80 \times 0,5 < X \leq 2,5 - 0,60 \times 0,5$ $1,6 < X \leq 2,2$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 2,5 - 1,80 \times 0,5$ $X \leq 1,6$	$\leq 40\%$	Sangat Kurang

1. Aspek Mengamati

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{\text{Total skor}}{n}$$

$$= \frac{113}{32} = 3,53$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,53}{4} \times 100\% = 88,25\% \text{ (Sangat Baik)} \end{aligned}$$

b. Indikator 2

$$\bar{X} \text{ (rata-rata)} = \frac{107}{32} = 3,34$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,34}{4} \times 100\% = 83,50\% \text{ (Baik)} \end{aligned}$$

c. Indikator 3

$$\bar{X} \text{ (rata-rata)} = \frac{102}{32} = 3,18$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,18}{4} \times 100\% = 79,50\% \text{ (Baik)} \end{aligned}$$

2. Aspek Mengklasifikasi

a. Indikator 1

$$\begin{aligned}\bar{X} \text{ (rata-rata)} &= \frac{118}{32} = 3,68 \\ \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,68}{4} \times 100\% = 92,00\% \text{ (Sangat Baik)}\end{aligned}$$

b. Indikator 2

$$\begin{aligned}\bar{X} \text{ (rata-rata)} &= \frac{74}{32} = 2,31 \\ \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,31}{4} \times 100\% = 57,75\% \text{ (Cukup)}\end{aligned}$$

c. Indikator 3

$$\begin{aligned}\bar{X} \text{ (rata-rata)} &= \frac{120}{32} = 3,75 \\ \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,75}{4} \times 100\% = 93,75\% \text{ (Sangat Baik)}\end{aligned}$$

3. Aspek Menggunakan Alat dan Bahan

a. Indikator 1

$$\begin{aligned}\bar{X} \text{ (rata-rata)} &= \frac{101}{32} = 3,15 \\ \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,15}{4} \times 100\% = 78,75\% \text{ (Baik)}\end{aligned}$$

b. Indikator 2

$$\begin{aligned}\bar{X} \text{ (rata-rata)} &= \frac{98}{32} = 3,06 \\ \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,06}{4} \times 100\% = 76,50\% \text{ (Baik)}\end{aligned}$$

4. Aspek Mengukur

a. Indikator 1

$$\begin{aligned}\bar{X} \text{ (rata-rata)} &= \frac{30}{32} = 0,93 \\ \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{0,93}{4} \times 100\% = 23,25\% \text{ (Sangat Kurang)}\end{aligned}$$

b. Indikator 2

$$\begin{aligned}\bar{X} \text{ (rata-rata)} &= \frac{95}{32} = 2,96 \\ \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,96}{4} \times 100\% = 74,00\% \text{ (Baik)}\end{aligned}$$

5. Aspek Menginterpretasi Data

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{70}{32} = 2,18$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,18}{4} \times 100\% = 54,50\% \text{ (Kurang)} \end{aligned}$$

b. Indikator 2

$$\bar{X} \text{ (rata-rata)} = \frac{114}{32} = 3,56$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,56}{4} \times 100\% = 89,00\% \text{ (Sangat Baik)} \end{aligned}$$

6. Aspek Mengkomunikasikan

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{106}{32} = 3,31$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,31}{4} \times 100\% = 82,75\% \text{ (Baik)} \end{aligned}$$

b. Indikator 2

$$\bar{X} \text{ (rata-rata)} = \frac{72}{32} = 2,25$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,25}{4} \times 100\% = 56,25\% \text{ (Kurang)} \end{aligned}$$

c. Indikator 3

$$\bar{X} \text{ (rata-rata)} = \frac{72}{32} = 2,25$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,25}{4} \times 100\% = 56,25\% \text{ (Kurang)} \end{aligned}$$

d. Indikator 4

$$\bar{X} \text{ (rata-rata)} = \frac{72}{32} = 2,25$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,25}{4} \times 100\% = 56,25\% \text{ (Kurang)} \end{aligned}$$

7. Aspek Menyimpulkan

Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{65}{32} = 2,03$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,03}{4} \times 100\% = 50,75\% \text{ (Kurang)} \end{aligned}$$

Konversi Skor Penilaian Lembar Observasi Keterampilan Proses Sains dari Tiap Aspek pada Praktikum Larutan Penyangga

1. Aspek Mengamati
 - a. Jumlah indikator = 1 butir
 - b. Skor tertinggi = 4
 - c. Skor terendah = 1
 - d. Rerata skor ideal (\bar{X}_i)

$$= \frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$$

$$= \frac{1}{2} (4 + 1)$$

$$= \frac{1}{2} (5) = 2,5$$
 - e. Simpangan Baku ideal (SBi)

$$= \frac{1}{6} (\text{skor tertinggi} - \text{skor terendah})$$

$$= \frac{1}{6} (4 - 1)$$

$$= \frac{1}{6} (3) = 0,5$$
 - f. \bar{X} (rata-rata)

$$= \frac{\text{Total skor}}{n}$$

$$= \frac{113}{32} = 3,53$$
 - g. Persentase skor

$$= \frac{\bar{X} (\text{rata-rata})}{\text{Skor tertinggi}} \times 100\%$$

$$= \frac{3,53}{4} \times 100\% = 88,25\%$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 3,4$	$>85\%$	Sangat Baik
$2,8 < X \leq 3,4$	$>70-85\%$	Baik
$2,2 < X \leq 2,8$	$>55-70\%$	Cukup
$1,6 < X \leq 2,2$	$>40-55\%$	Kurang
$X \leq 1,6$	$\leq 40\%$	Sangat Kurang

2. Aspek Mengklasifikasi
 - a. Jumlah indikator = 1 butir
 - b. Skor tertinggi = 4
 - c. Skor terendah = 1
 - d. Rerata skor ideal (\bar{X}_i)

$$= \frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$$

$$= \frac{1}{2} (4 + 1)$$

$$= \frac{1}{2}(5) = 2,5$$

e. Simpangan Baku ideal (SBi) = $\frac{1}{6}(skor\ tertinggi - skor\ terendah)$
 $= \frac{1}{6}(4 - 1)$

$$= \frac{1}{6}(3) = 0,5$$

f. \bar{X} (rata-rata) = $\frac{Total\ skor}{n}$
 $= \frac{83}{32} = 2,59$

g. Persentase skor = $\frac{\bar{X}\ (rata-rata)}{skor\ tertinggi} \times 100\%$
 $= \frac{2,59}{4} \times 100\% = 64,75\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 3,4$	>85%	Sangat Baik
$2,8 < X \leq 3,4$	>70-85%	Baik
$2,2 < X \leq 2,8$	>55-70%	Cukup
$1,6 < X \leq 2,2$	>40-55%	Kurang
$X \leq 1,6$	$\leq 40\%$	Sangat Kurang

3. Aspek Menggunakan Alat dan Bahan

a. Jumlah indikator = 2 butir

b. Skor tertinggi = 4 x 2 butir = 8

c. Skor terendah = 1 x 2 butir = 2

d. Rerata skor ideal ($\bar{X}i$) = $\frac{1}{2}(skor\ tertinggi + skor\ terendah)$
 $= \frac{1}{2}(8 + 2)$

$$= \frac{1}{2}(10) = 5$$

e. Simpangan Baku ideal (SBi) = $\frac{1}{6}(skor\ tertinggi - skor\ terendah)$
 $= \frac{1}{6}(8 - 2)$

$$= \frac{1}{6}(6) = 1$$

f. \bar{X} (rata-rata) = $\frac{Total\ skor}{n}$

$$= \frac{110+104}{32}$$

$$= \frac{214}{32} = 6,68$$

g. Persentase skor

$$= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$$

$$= \frac{6,68}{8} \times 100\% = 83,50\%$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 6,8$	>85%	Sangat Baik
$5,6 < X \leq 6,8$	>70-85%	Baik
$4,4 < X \leq 5,6$	>55-70%	Cukup
$3,2 < X \leq 4,4$	>40-55%	Kurang
$X \leq 3,2$	$\leq 40\%$	Sangat Kurang

4. Aspek Mengukur

- a. Jumlah indikator = 2 butir
- b. Skor tertinggi = 4 x 2 butir = 8
- c. Skor terendah = 1 x 2 butir = 2
- d. Rerata skor ideal (\bar{X}_i)
- $$= \frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$$
- $$= \frac{1}{2} (8 + 2)$$
- $$= \frac{1}{2} (10) = 5$$
- e. Simpangan Baku ideal (SBI)
- $$= \frac{1}{6} (\text{skor tertinggi} - \text{skor terendah})$$
- $$= \frac{1}{6} (8 - 2)$$
- $$= \frac{1}{6} (6) = 1$$
- f. \bar{X} (rata-rata)
- $$= \frac{\text{Total skor}}{n}$$
- $$= \frac{69+89}{32}$$
- $$= \frac{158}{32} = 4,9$$
- g. Persentase skor
- $$= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$$
- $$= \frac{4,9}{8} \times 100\% = 61,25\%$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 6,8$	$>85\%$	Sangat Baik
$5,6 < X \leq 6,8$	$>70-85\%$	Baik
$4,4 < X \leq 5,6$	$>55-70\%$	Cukup
$3,2 < X \leq 4,4$	$>40-55\%$	Kurang
$X \leq 3,2$	$\leq 40\%$	Sangat Kurang

5. Aspek Menginterpretasi Data

- a. Jumlah indikator = 2 butir
- b. Skor tertinggi = 4×2 butir = 8
- c. Skor terendah = 1×2 butir = 2
- d. Rerata skor ideal (\bar{X}_i)

$$= \frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$$

$$= \frac{1}{2} (8 + 2)$$

$$= \frac{1}{2} (10) = 5$$
- e. Simpangan Baku ideal ($SB\hat{i}$)

$$= \frac{1}{6} (\text{skor tertinggi} - \text{skor terendah})$$

$$= \frac{1}{6} (8 - 2)$$

$$= \frac{1}{6} (6) = 1$$
- f. \bar{X} (rata-rata)

$$= \frac{\text{Total skor}}{n}$$

$$= \frac{61+93}{32}$$

$$= \frac{154}{32} = 4,81$$
- g. Persentase skor

$$= \frac{\bar{X} (\text{rata-rata})}{\text{skor tertinggi}} \times 100\%$$

$$= \frac{4,81}{8} \times 100\% = 60,12\%$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 6,8$	$>85\%$	Sangat Baik
$5,6 < X \leq 6,8$	$>70-85\%$	Baik
$4,4 < X \leq 5,6$	$>55-70\%$	Cukup
$3,2 < X \leq 4,4$	$>40-55\%$	Kurang
$X \leq 3,2$	$\leq 40\%$	Sangat Kurang

6. Aspek Mengkomunikasikan

- a. Jumlah indikator = 4 butir
- b. Skor tertinggi = 4×4 butir = 16
- c. Skor terendah = 1×4 butir = 4
- d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}(\text{skor tertinggi} + \text{skor terendah})$
 $= \frac{1}{2}(16 + 4)$
 $= \frac{1}{2}(20) = 10$
- e. Simpangan Baku ideal (SBI) = $\frac{1}{6}(\text{skor tertinggi} - \text{skor terendah})$
 $= \frac{1}{6}(16 - 4)$
 $= \frac{1}{6}(12) = 2$
- f. \bar{X} (rata-rata) = $\frac{\text{Total skor}}{n}$
 $= \frac{93+62+61+64}{32}$
 $= \frac{280}{32} = 8,75$
- g. Persentase skor = $\frac{\bar{X}(\text{rata-rata})}{\text{Skor tertinggi}} \times 100\%$
 $= \frac{8,75}{16} \times 100\% = 54,68\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 13,6$	$>85\%$	Sangat Baik
$11,2 < X \leq 13,6$	$>70-85\%$	Baik
$8,8 < X \leq 11,2$	$>55-70\%$	Cukup
$6,4 < X \leq 8,8$	$>40-55\%$	Kurang
$X \leq 6,4$	$\leq 40\%$	Sangat Kurang

7. Aspek Menyimpulkan

- a. Jumlah indikator = 1 butir
- b. Skor tertinggi = 4
- c. Skor terendah = 1
- d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}(\text{skor tertinggi} + \text{skor terendah})$
 $= \frac{1}{2}(4 + 1)$

$$= \frac{1}{2}(5) = 2,5$$

e. Simpangan Baku ideal (SBi) = $\frac{1}{6}(skor\ tertinggi - skor\ terendah)$
 $= \frac{1}{6}(4 - 1)$
 $= \frac{1}{6}(3) = 0,5$

f. \bar{X} (rata-rata) = $\frac{Total\ skor}{n}$
 $= \frac{57}{32} = 1,78$

g. Persentase skor = $\frac{\bar{X}\ (rata-rata)}{skor\ tertinggi} \times 100\%$
 $= \frac{1,78}{4} \times 100\% = 44,50\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 3,4$	$>85\%$	Sangat Baik
$2,8 < X \leq 3,4$	$>70-85\%$	Baik
$2,2 < X \leq 2,8$	$>55-70\%$	Cukup
$1,6 < X \leq 2,2$	$>40-55\%$	Kurang
$X \leq 1,6$	$\leq 40\%$	Sangat Kurang

Konversi Skor Penilaian Lembar Observasi Keterampilan Proses Sains dari Tiap Indikator Aspek pada Praktikum Larutan Penyangga

Secara Umum (Per Indikator) :

a. Jumlah indikator = 1 butir
b. Skor tertinggi = 4
c. Skor terendah = 1
d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}(skor\ tertinggi + skor\ terendah)$
 $= \frac{1}{2}(4 + 1)$
 $= \frac{1}{2}(5) = 2,5$

e. Simpangan Baku ideal (SBi) = $\frac{1}{6}(skor\ tertinggi - skor\ terendah)$

$$= \frac{1}{6}(4 - 1)$$

$$= \frac{1}{6}(3) = 0,5$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 2,5 + 1,80 \times 0,5$ $X > 3,4$	>85%	Sangat Baik
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $2,5 + 0,60 \times 0,5 < X \leq 2,5 + 1,80 \times 0,5$ $2,8 < X \leq 3,4$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $2,5 - 0,60 \times 0,5 < X \leq 2,5 + 0,60 \times 0,5$ $2,2 < X \leq 2,8$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $2,5 - 1,80 \times 0,5 < X \leq 2,5 - 0,60 \times 0,5$ $1,6 < X \leq 2,2$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 2,5 - 1,80 \times 0,5$ $X \leq 1,6$	$\leq 40\%$	Sangat Kurang

1. Aspek Mengamati

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{\text{Total skor}}{n}$$

$$= \frac{113}{32} = 3,53$$

$$\text{Persentase skor} = \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$$

$$= \frac{3,53}{4} \times 100\% = 88,25\% \text{ (Sangat Baik)}$$

2. Aspek Mengklasifikasi

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{83}{32} = 2,3$$

$$\text{Persentase skor} = \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$$

$$= \frac{2,3}{4} \times 100\% = 57,50\% \text{ (Cukup)}$$

3. Aspek Menggunakan Alat dan Bahan

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{110}{32} = 3,4$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,4}{4} \times 100\% = 85,00\% \text{ (Baik)} \end{aligned}$$

b. Indikator 2

$$\bar{X} \text{ (rata-rata)} = \frac{104}{32} = 3,25$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{3,25}{4} \times 100\% = 81,25\% \text{ (Baik)} \end{aligned}$$

4. Aspek Mengukur

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{69}{32} = 2,15$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,15}{4} \times 100\% = 53,75\% \text{ (Kurang)} \end{aligned}$$

b. Indikator 2

$$\bar{X} \text{ (rata-rata)} = \frac{89}{32} = 2,78$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,78}{4} \times 100\% = 69,50\% \text{ (Cukup)} \end{aligned}$$

5. Aspek Menginterpretasi Data

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{61}{32} = 1,90$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{1,90}{4} \times 100\% = 47,50\% \text{ (Kurang)} \end{aligned}$$

b. Indikator 2

$$\bar{X} \text{ (rata-rata)} = \frac{93}{32} = 2,90$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,90}{4} \times 100\% = 72,50\% \text{ (Baik)} \end{aligned}$$

6. Aspek Mengkomunikasikan

a. Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{93}{32} = 2,90$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,90}{4} \times 100\% = 72,50\% \text{ (Baik)} \end{aligned}$$

b. Indikator 2

$$\bar{X} \text{ (rata-rata)} = \frac{62}{32} = 1,93$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{1,93}{4} \times 100\% = 48,25\% \text{ (Kurang)} \end{aligned}$$

c. Indikator 3

$$\bar{X} \text{ (rata-rata)} = \frac{61}{32} = 1,90$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{1,90}{4} \times 100\% = 47,50\% \text{ (Kurang)} \end{aligned}$$

d. Indikator 4

$$\bar{X} \text{ (rata-rata)} = \frac{64}{32} = 2,0$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{2,0}{4} \times 100\% = 50,00\% \text{ (Kurang)} \end{aligned}$$

7. Aspek Menyimpulkan

Indikator 1

$$\bar{X} \text{ (rata-rata)} = \frac{57}{32} = 1,78$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\% \\ &= \frac{1,78}{4} \times 100\% = 44,50\% \text{ (Kurang)} \end{aligned}$$

Konversi Skor Penilaian Lembar Observasi Keterampilan Proses Sains dari Rata-Rata Tiap Aspek pada Praktikum Asam Basa dan Larutan Penyangga

1. Aspek Mengamati

a. Jumlah indikator = 4 butir

b. Skor tertinggi = 4 x 4 butir = 16

c. Skor terendah = 1 x 4 butir = 4

d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}$ (skor tertinggi + skor terendah)
= $\frac{1}{2}$ (16 + 4)

$$= \frac{1}{2} (20) = 10$$

e. Simpangan Baku ideal (SBI) = $\frac{1}{6}$ (skor tertinggi – skor terendah)
= $\frac{1}{6}$ (16 – 4)

$$= \frac{1}{6}(12) = 2$$

f. \bar{X} (rata-rata) $= 10,06 + 3,53$
 $= 13,59 = 13,6$

g. Persentase skor $= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$
 $= \frac{13,6}{16} \times 100\% = 85,00\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 13,6$	$>85\%$	Sangat Baik
$11,2 < X \leq 13,6$	$>70-85\%$	Baik
$8,8 < X \leq 11,2$	$>55-70\%$	Cukup
$6,4 < X \leq 8,8$	$>40-55\%$	Kurang
$X \leq 6,4$	$\leq 40\%$	Sangat Kurang

2. Aspek Mengklasifikasi

a. Jumlah indikator $= 4$ butir
 b. Skor tertinggi $= 4 \times 4$ butir $= 16$
 c. Skor terendah $= 1 \times 4$ butir $= 4$
 d. Rerata skor ideal (\bar{X}_i) $= \frac{1}{2}(\text{skor tertinggi} + \text{skor terendah})$
 $= \frac{1}{2}(16 + 4)$
 $= \frac{1}{2}(20) = 10$

e. Simpangan Baku ideal (SBI) $= \frac{1}{6}(\text{skor tertinggi} - \text{skor terendah})$
 $= \frac{1}{6}(16 - 4)$
 $= \frac{1}{6}(12) = 2$

f. \bar{X} (rata-rata) $= 9,75 + 2,59$
 $= 12,34$

g. Persentase skor $= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$
 $= \frac{12,34}{16} \times 100\% = 77,12\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 13,6$	$>85\%$	Sangat Baik
$11,2 < X \leq 13,6$	$>70-85\%$	Baik
$8,8 < X \leq 11,2$	$>55-70\%$	Cukup
$6,4 < X \leq 8,8$	$>40-55\%$	Kurang
$X \leq 6,4$	$\leq 40\%$	Sangat Kurang

3. Aspek Menggunakan Alat dan Bahan
- Jumlah indikator = 4 butir
 - Skor tertinggi = 4×4 butir = 16
 - Skor terendah = 1×4 butir = 4
 - Rerata skor ideal (\bar{X}_i)

$$= \frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$$

$$= \frac{1}{2} (16 + 4)$$

$$= \frac{1}{2} (20) = 10$$
 - Simpangan Baku ideal (SBI)

$$= \frac{1}{6} (\text{skor tertinggi} - \text{skor terendah})$$

$$= \frac{1}{6} (16 - 4)$$

$$= \frac{1}{6} (12) = 2$$
 - \bar{X} (rata-rata)

$$= 6,22 + 6,68$$

$$= 12,9$$
 - Persentase skor

$$= \frac{\bar{X} (\text{rata-rata})}{\text{Skor tertinggi}} \times 100\%$$

$$= \frac{12,9}{16} \times 100\% = 80,62\%$$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 13,6$	$>85\%$	Sangat Baik
$11,2 < X \leq 13,6$	$>70-85\%$	Baik
$8,8 < X \leq 11,2$	$>55-70\%$	Cukup
$6,4 < X \leq 8,8$	$>40-55\%$	Kurang
$X \leq 6,4$	$\leq 40\%$	Sangat Kurang

4. Aspek Mengukur
- Jumlah indikator = 4 butir
 - Skor tertinggi = 4×4 butir = 16
 - Skor terendah = 1×4 butir = 4

- d. Rerata skor ideal (\bar{X}_i) $= \frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$
 $= \frac{1}{2}(16 + 4)$
 $= \frac{1}{2}(20) = 10$
- e. Simpangan Baku ideal (SBi) $= \frac{1}{6} (\text{skor tertinggi} - \text{skor terendah})$
 $= \frac{1}{6}(16 - 4)$
 $= \frac{1}{6}(12) = 2$
- f. \bar{X} (rata-rata) $= 3,90 + 4,9$
 $= 8,80$
- g. Persentase skor $= \frac{\bar{X} (\text{rata-rata})}{\text{Skor tertinggi}} \times 100\%$
 $= \frac{8,80}{16} \times 100\% = 55,00\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 13,6$	$>85\%$	Sangat Baik
$11,2 < X \leq 13,6$	$>70-85\%$	Baik
$8,8 < X \leq 11,2$	$>55-70\%$	Cukup
$6,4 < X \leq 8,8$	$>40-55\%$	Kurang
$X \leq 6,4$	$\leq 40\%$	Sangat Kurang

5. Aspek Menginterpretasi Data

- a. Jumlah indikator $= 4$ butir
- b. Skor tertinggi $= 4 \times 4$ butir $= 16$
- c. Skor terendah $= 1 \times 4$ butir $= 4$
- d. Rerata skor ideal (\bar{X}_i) $= \frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$
 $= \frac{1}{2}(16 + 4)$
 $= \frac{1}{2}(20) = 10$
- e. Simpangan Baku ideal (SBi) $= \frac{1}{6} (\text{skor tertinggi} - \text{skor terendah})$
 $= \frac{1}{6}(16 - 4)$
 $= \frac{1}{6}(12) = 2$

f. \bar{X} (rata-rata) = 5,75 + 4,81
= 10,56

g. Persentase skor = $\frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$
= $\frac{10,56}{16} \times 100\% = 66,00\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 13,6$	>85%	Sangat Baik
$11,2 < X \leq 13,6$	>70-85%	Baik
$8,8 < X \leq 11,2$	>55-70%	Cukup
$6,4 < X \leq 8,8$	>40-55%	Kurang
$X \leq 6,4$	$\leq 40\%$	Sangat Kurang

6. Aspek Mengkomunikasikan

a. Jumlah indikator = 8 butir

b. Skor tertinggi = 4 x 8 butir = 32

c. Skor terendah = 1 x 8 butir = 8

d. Rerata skor ideal (\bar{X}_i) = $\frac{1}{2} (\text{skor tertinggi} + \text{skor terendah})$
= $\frac{1}{2} (32 + 8)$
= $\frac{1}{2} (40) = 20$

e. Simpangan Baku ideal (SB_i) = $\frac{1}{6} (\text{skor tertinggi} - \text{skor terendah})$
= $\frac{1}{6} (32 - 8)$
= $\frac{1}{6} (24) = 4$

f. \bar{X} (rata-rata) = 10,06 + 8,75
= 18,81

g. Persentase skor = $\frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$
= $\frac{18,81}{32} \times 100\% = 58,78\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}_i + 1,80 \times SB_i$ $X > 20 + 1,80 \times 4$	>85%	Sangat Baik

$X > 27,2$		
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $20 + 0,60 \times 4 < X \leq 20 + 1,80 \times 4$ $22,4 < X \leq 27,2$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $20 - 0,60 \times 4 < X \leq 20 + 0,60 \times 4$ $17,6 < X \leq 22,4$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $20 - 1,80 \times 4 < X \leq 20 - 0,60 \times 4$ $12,8 < X \leq 17,6$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 20 - 1,80 \times 4$ $X \leq 12,8$	$\leq 40\%$	Sangat Kurang

7. Aspek Menyimpulkan

- a. Jumlah indikator = 2 butir
- b. Skor tertinggi = 4×2 butir = 8
- c. Skor terendah = 1×2 butir = 2
- d. Rerata skor ideal ($\bar{X}i$) = $\frac{1}{2}$ (skor tertinggi + skor terendah)
 $= \frac{1}{2}(8 + 2)$
 $= \frac{1}{2}(10) = 5$
- e. Simpangan Baku ideal (SBi) = $\frac{1}{6}$ (skor tertinggi – skor terendah)
 $= \frac{1}{6}(8 - 2)$
 $= \frac{1}{6}(6) = 1$
- f. \bar{X} (rata-rata) = $2,03 + 1,78$
 $= 3,81$
- g. Persentase skor = $\frac{\bar{X} \text{ (rata-rata)}}{\text{Skor tertinggi}} \times 100\%$
 $= \frac{3,81}{8} \times 100\% = 47,62\%$

Tabel. Kriteria Kategori Penilaian ideal

Rentang Skor	Persentase Skor	Kategori
$X > 6,8$	>85%	Sangat Baik
$5,6 < X \leq 6,8$	>70-85%	Baik
$4,4 < X \leq 5,6$	>55-70%	Cukup
$3,2 < X \leq 4,4$	>40-55%	Kurang

$X \leq 3,2$	$\leq 40\%$	Sangat Kurang
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Konversi Skor Penilaian Rata-Rata Keterampilan Proses Sains pada Praktikum Asam Basa dan Larutan Penyangga

Jumlah indikator = 30

Skor tertinggi = 4

Skor terendah = 1

Skor maksimal ideal = jumlah indikator x skor tertinggi
= $30 \times 4 = 120$

Skor minimal ideal = jumlah indikator x skor terendah
= $30 \times 1 = 30$

Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}$ (skor maksimal ideal + skor minimal ideal)
= $\frac{1}{2}(120 + 30)$
= $\frac{1}{2}(150) = 75$

Simpangan Baku ideal (SB_i) = $\frac{1}{6}$ (skor maksimal ideal – skor minimal ideal)
= $\frac{1}{6}(120 - 30)$
= $\frac{1}{6}(90) = 15$

Konversi ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}_i + 1,80 \times SB_i$ $X > 75 + 1,80 \times 15$ $X > 102$	>85%	Sangat Baik
$\bar{X}_i + 0,60 \times SB_i < X \leq \bar{X}_i + 1,80 \times SB_i$ $75 + 0,60 \times 15 < X \leq 75 + 1,80 \times 15$ $84 < X \leq 102$	>70-85%	Baik

$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ 75 - 0,60 x 15 < X ≤ 75 + 0,60 x 15 66 < X ≤ 84	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ 75 - 1,80 x 15 < X ≤ 75 - 0,60 x 15 48 < X ≤ 66	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ X ≤ 75 - 1,80 x 15 X ≤ 48	≤ 40%	Sangat Kurang

$$\bar{X} \text{ (rata-rata)} = 13,59 + 12,34 + 12,9 + 8,80 + 10,56 + 18,81 + 3,81$$

$$= 80,81$$

$$\text{Persentase skor} = \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor maksimal}} \times 100\%$$

$$= \frac{80,81}{120} \times 100\% = 67,34\%$$

Skor Peserta Didik pada LKPD

- a. Praktikum Asam Basa
Percobaan I

Kelompok	Skor Tiap Nomor									Skor Total
	1	2	3	4	5	6	7	8	9	
I	2	4	1	1	1	1	1	4	2	17
II	1	2	0	0	1	1	0	3	2	10
III	1	1	0	0	1	1	0	3	2	9
IV	2	4	1	1	1	1	1	4	1	16
V	2	4	1	1	1	1	1	4	2	17

Percobaan II

Kelompok	Skor Tiap Nomor									Skor Total
	1				2				3	
	a	b	c	d	a	b	c	d		
I	2	4	2	3	2	4	2	3	0	22
II	4	4	4	3	4	4	4	3	0	30
III	4	4	4	3	2	2	2	2	0	23
IV	3	4	4	3	1	2	1	1	1	20
V	4	3	4	3	4	3	3	3	1	28

Percobaan III

Kelompok	Skor Tiap Nomor				Skor Total
	1	2	3	4	
I	1	1	2	2	6
II	1	1	1	2	5
III	1	2	1	2	6
IV	2	2	2	2	8
V	1	1	2	2	6

Skor Keseluruhan Praktikum Asam Basa

Kelompok	Percobaan			Skor Total
	I	II	III	
I	17	22	6	45
II	10	30	5	45
III	9	23	6	38
IV	16	20	8	44
V	17	28	6	51

Konversi Skor Penilaian LKPD pada Praktikum Asam Basa

Jumlah indikator = 16

Skor tertinggi = 4

Skor terendah = 1

Skor maksimal ideal = jumlah indikator x skor tertinggi

$$= 16 \times 4 = 64$$

Skor minimal ideal = jumlah indikator x skor terendah

$$= 16 \times 1 = 16$$

Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}$ (skor maksimal ideal + skor minimal ideal)

$$= \frac{1}{2}(64 + 16)$$

$$= \frac{1}{2}(80) = 40$$

Simpangan Baku ideal (SBi) = $\frac{1}{6}(\text{skor maksimal ideal} - \text{skor minimal ideal})$

$$= \frac{1}{6}(64 - 16)$$

$$= \frac{1}{6}(48) = 8$$

Konversi ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 40 + 1,80 \times 8$ $X > 54,4$	>85%	Sangat Baik
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $40 + 0,60 \times 8 < X \leq 40 + 1,80 \times 8$ $44,8 < X \leq 54,4$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $40 - 0,60 \times 8 < X \leq 40 + 0,60 \times 8$ $35,2 < X \leq 44,8$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $40 - 1,80 \times 8 < X \leq 40 - 0,60 \times 8$ $25,6 < X \leq 35,2$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 40 - 1,80 \times 8$ $X \leq 25,6$	$\leq 40\%$	Sangat Kurang

$$\bar{X} \text{ (rata-rata)} = \frac{45 + 45 + 38 + 44 + 51}{5}$$

$$= 44,6$$

$$\text{Persentase skor} = \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor maksimal}} \times 100\%$$

$$= \frac{44,6}{64} \times 100\% = 69,70\%$$

b. Praktikum Larutan Penyangga

Kelompok	Skor Tiap Nomor							Skor Total
	1	2	3	4	5	6	7	
I	1	1	1	2	1	1	2	9
II	2	2	2	3	1	1	2	13
III	2	2	2	2	1	1	2	12
IV	2	2	2	2	1	1	2	12
V	2	2	2	3	1	1	2	13

Konversi Skor Penilaian LKPD pada Praktikum Larutan Penyangga

Jumlah indikator = 7

Skor tertinggi = 4

Skor terendah = 1

Skor maksimal ideal = jumlah indikator x skor tertinggi

$$= 7 \times 4 = 28$$

Skor minimal ideal = jumlah indikator x skor terendah

$$= 7 \times 1 = 7$$

Rerata skor ideal (\bar{X}_i) = $\frac{1}{2}$ (skor maksimal ideal + skor minimal ideal)

$$= \frac{1}{2}(28 + 7)$$

$$= \frac{1}{2}(35) = 17,5$$

Simpangan Baku ideal (SBf) = $\frac{1}{6}$ (skor maksimal ideal – skor minimal ideal)

$$= \frac{1}{6}(28 - 7)$$

$$= \frac{1}{6}(21) = 3,5$$

Konversi ideal

Rentang Skor	Persentase Skor	Kategori
$X > \bar{X}i + 1,80 \times SBi$ $X > 17,5 + 1,80 \times 3,5$ $X > 23,8$	>85%	Sangat Baik
$\bar{X}i + 0,60 \times SBi < X \leq \bar{X}i + 1,80 \times SBi$ $17,5 + 0,60 \times 3,5 < X \leq 17,5 + 1,80 \times 3,5$ $19,6 < X \leq 23,8$	>70-85%	Baik
$\bar{X}i - 0,60 \times SBi < X \leq \bar{X}i + 0,60 \times SBi$ $17,5 - 0,60 \times 3,5 < X \leq 17,5 + 0,60 \times 3,5$ $15,4 < X \leq 19,6$	>55-70%	Cukup
$\bar{X}i - 1,80 \times SBi < X \leq \bar{X}i - 0,60 \times SBi$ $17,5 - 1,80 \times 3,5 < X \leq 17,5 - 0,60 \times 3,5$ $11,2 < X \leq 15,4$	>40-55%	Kurang
$X \leq \bar{X}i - 1,80 \times SBi$ $X \leq 17,5 - 1,80 \times 3,5$ $X \leq 11,2$	$\leq 40\%$	Sangat Kurang

$$\bar{X} \text{ (rata-rata)} = \frac{9 + 13 + 12 + 12 + 13}{5} = 11,8$$

$$\begin{aligned} \text{Persentase skor} &= \frac{\bar{X} \text{ (rata-rata)}}{\text{Skor maksimal}} \times 100\% \\ &= \frac{11,8}{28} \times 100\% = 42,14\% \end{aligned}$$