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<a name="home">

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<br />

<div style="text-align: center;">

<a href="#">[KEMBALI KE MENU SEBELUMNYA]</a></div>

<br />

<center>

<div style="background-color: white; border: 2px dashed rgb(23, 128, 221); height: 240px; overflow:
auto; padding: 10px; text-align: center; width: 330px;">

<b>DAFTAR ISI</b>

<br />

<div style="text-align: left;">

<a href="#Tujuan">1. Tujuan</a></div>

<div style="text-align: left;">

<a href="#Alat dan Bahan">2. Alat dan Bahan</a></div>

<div style="text-align: left;">

<a href="#Dasar Teori">3. Dasar Teori</a></div>

<div style="text-align: left;">

<a href="#Percobaan">4. Percobaan</a><br />

<div style="text-align: left;">

<a href="#Download">5. Download</a></div>

<div style="text-align: left;">

</div>

</div>

</div></center>

<a name="Tujuan">

<p><b><span style="font-family: georgia;"><br /></span></b></p><p class="MsoNormal"
style="background: white; line-height: normal; margin-bottom: 3pt; tab-stops: 45.8pt 91.6pt 137.4pt
183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt
732.8pt; text-align: justify;"><b><span style="color: #505050; font-family:
'Georgia', serif; font-size: 13.5pt; mso-bidi-font-family: 'Times New Roman';;
mso-bidi-language: AR-SA; mso-fareast-font-family: 'Times New
Roman'>>1.Tujuan</span></b><span face=""Arial";sans-serif" lang="IN"
style="color: #222222; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language: AR-SA;

```

mso-fareast-font-family: "Times New Roman";"><o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 3.0pt; margin-left: 54.0pt; margin-right: 0cm; margin-top: 0cm; margin: 0cm 0cm 3pt 54pt; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 3pt; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">Untuk mengetahui apa yang dimaksud dengan

"Constant-Gain Multiplier"<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 3pt; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;"> Untuk mengetahui contoh rangkaian

"Constant-Gain Multiplier"<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; mso-outline-level: 3;">

 2. Alat dan Bahan[kembali]<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; margin-left: 36.0pt; margin-right: 0cm; margin-top: 0cm; margin: 0cm 0cm 0cm 36pt; mso-outline-level: 3; text-align: justify;">1. ALAT <o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; margin-left: 36.0pt; margin-right: 0cm; margin-top: 0cm; margin: 0cm 0cm 0cm 36pt; mso-outline-level: 3; text-align:

!--[endif]--<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; margin-left: 36.0pt; margin-right: 0cm; margin-top: 0cm; margin: 0cm 0cm 0cm 36pt;"></p><div class="separator" style="clear: both; text-align: center;"></div>
<span style="color: red; font-family:

"inherit"; serif; font-size: 18pt; mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";">

<!--[if !supportLineBreakNewLine]-->

<!--[endif]--><o:p></o:p><p></p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p>

</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;"></td>

</tr>

</tbody></table>

</div><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; text-align: justify;">OSILOSKOP

adalah komponen elektronika yang mempunyai

kemampuan menyimpan electron-elektron selama waktu yang tidak tertentu. Osiloskop

dilengkapi dengan tabung sinar katode. Peranti pemancar elektron

memproyeksikan sorotan elektron ke layar tabung sinar katode.<span style="color: #505050; font-family: "Georgia"; serif; font-size: 11.5pt; mso-bidi-font-family: "Times New

Roman"; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";"><o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto;">FUNGSI Osiloskop

adalah untuk mengamati bentuk

gelombang input dan output pada rangkaian.untuk mengamati bentuk gelombang

input dan output pada rangkaian.<o:p></o:p></p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p>

</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;"></td>

</tr>

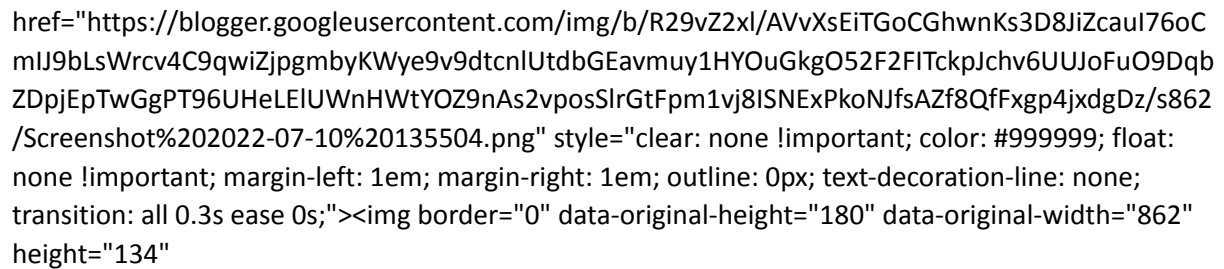
</tbody></table>

</div><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;"><o:p> </o:p></p><div class="separator" style="clear: both; text-align: center;"><a

href="https://blogger.googleusercontent.com/img/a/AVvXsEjQuwHElfKV1ItAfBV8Zxt3hAFr8V-eLlfhxlYgi0NF0gyaBRM3KdMA4-vDTYUMYHVKj0IYNW2mRV9-SfHWtJB9k6Oe_Z_OoCNMmurcJQBCZ5k-Ni_a ho74oBaXT2DuYqu6bdfE2PXXiTnYlfWEJ9BbsMeYMQTe5B2rBldt6CvUXwrgnU6ldrv0d4tsAQ=s310"

[illegible]

Daya adalah suatu alat listrik yang dapat menyediakan energi listrik untuk perangkat listrik ataupun elektronika lainnya.



listrik AC.

VSINE, berfungsi sebagai sumber arus

class="separator" style="clear: both; text-align: center; "></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center; ">
</p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; ">Spesifikasi<o:p></o:p></p><table border="0" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border-collapse: collapse; mso-yfti-tbllook: 1184; width: 794px; ">

<tbody><tr>

<td style="border: 1pt solid white; mso-border-alt: solid white .75pt; padding: 3pt 6.75pt; ">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt; ">DC Magnitude<o:p></o:p></p>

</td>

<td style="border-left: none; border: 1pt solid white; mso-border-alt: solid white .75pt; mso-border-left-alt: solid white .75pt; padding: 3pt 6.75pt; ">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt; ">DC offset used in an Operating Point Analysis.

(Default = 0).<o:p></o:p></p>

</td>

</tr>

<tr>

<td style="border-top: none; border: 1pt solid white; mso-border-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt; ">

AC Magnitude

the magnitude of the source when used in an AC Small

Signal Analysis. (Default = 1).

AC Phase

the phase of the source when used in an AC Small

Signal Analysis. (Default = 0).

</tr>

<tr>

<td style="border-top: none; border: 1pt solid white; mso-border-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;">Offset<o:p></o:p></p>

</td>

<td style="border-bottom: 1pt solid white; border-left: none; border-right: 1pt solid white; border-top: none; mso-border-alt: solid white .75pt; mso-border-left-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;">DC offset voltage of the signal generator (in

Volts). (Default = 0).<o:p></o:p></p>

</td>

</tr>

<tr>

<td style="border-top: none; border: 1pt solid white; mso-border-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;">Amplitude<o:p></o:p></p>

</td>

<td style="border-bottom: 1pt solid white; border-left: none; border-right: 1pt solid white; border-top: none; mso-border-alt: solid white .75pt; mso-border-left-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;"><span face="OpenSans-Regular" style="color: #2a2828; font-size: 10.5pt;

mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";>peak amplitude of the sinusoid (in Volts).
(Default

= 1).<o:p></o:p></p>

</td>

</tr>

<tr>

<td style="border-top: none; border: 1pt solid white; mso-border-alt: solid white .75pt;
mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;"><span
face=""OpenSans-Regular";,serif" style="color: #2a2828; font-size: 10.5pt;
mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";">Frequency<span
face=""OpenSans-Regular";,serif" style="color: #2a2828; font-size: 10.5pt;
mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";"><o:p></o:p></p>

</td>

<td style="border-bottom: 1pt solid white; border-left: none; border-right: 1pt solid white;
border-top: none; mso-border-alt: solid white .75pt; mso-border-left-alt: solid white .75pt;
mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;"><span
face=""OpenSans-Regular";,serif" style="color: #2a2828; font-size: 10.5pt;
mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";">frequency of the sinusoidal output
voltage (in Hz).

(Default = 1K).<o:p></o:p></p>

</td>

</tr>

<tr>

<td style="border-top: none; border: 1pt solid white; mso-border-alt: solid white .75pt;
mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;"><span
face=""OpenSans-Regular";,serif" style="color: #2a2828; font-size: 10.5pt;
mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";">Delay<span
face=""OpenSans-Regular";,serif" style="color: #2a2828; font-size: 10.5pt;
mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";"><o:p></o:p></p>

</td>

<td style="border-bottom: 1pt solid white; border-left: none; border-right: 1pt solid white; border-top: none; mso-border-alt: solid white .75pt; mso-border-left-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;">delay time until the source voltage commences (in

seconds). (Default = 0).<o:p></o:p></p>

</td>

</tr>

<tr>

<td style="border-top: none; border: 1pt solid white; mso-border-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;">Damping Factor<o:p></o:p></p>

</td>

<td style="border-bottom: 1pt solid white; border-left: none; border-right: 1pt solid white; border-top: none; mso-border-alt: solid white .75pt; mso-border-left-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

<p class="MsoNormal" style="line-height: 14.65pt; margin-bottom: 14.4pt;">the rate at which the sinusoid decreases/increases

in amplitude (in 1/seconds). A positive value results in an exponentially

decreasing amplitude; a negative value gives an increasing amplitude. A zero

(0) value gives a constant amplitude sine wave. (Default = 0).<o:p></o:p></p>

</td>

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<tr>

<td style="border-top: none; border: 1pt solid white; mso-border-alt: solid white .75pt; mso-border-top-alt: solid white .75pt; padding: 3pt 6.75pt;">

nilai tetap terdiri dari film tipis karbon yang

diendapkan subtrat isolator kemudian dipotong berbentuk spiral. Keuntungan

jenis fixed resistor ini dapat menghasilkan resistor dengan toleransi yang

lebih rendah.<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">Cara menghitung nilai resistor:<o:p></o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">Tabel warna<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">
</p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">
</p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;"><span style="color: #4e4e4e; font-family:

"Georgia"; serif; font-size: 11.5pt; mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";>Contoh
:<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">Gelang ke 1 : Coklat =
1<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">Gelang ke 2 : Hitam =
0<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">Gelang ke 3 : Hijau = 5 nol
dibelakang

angka gelang ke-2; atau kalikan 105<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">Gelang ke 4 : Perak = Toleransi 10%<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">Maka nilai resistor tersebut adalah 10 *
105 =

1.000.000 Ohm atau 1 MOhm dengan toleransi 10%.<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">
<p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto;"></p><div class="separator" style="clear: both; text-align: center;"><img border="0" data-original-height="130" data-original-width="200" height="130"

[illegible]

LM741<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;"> </p><div class="separator" style="clear: both; text-align: center;"><a href="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEg3B7s3SParJA1TdglyUumkvuQfWNFA-oYF6FnI0-koUpFYRfL-IDOFV512iFWMuxLbHspqTp1-9RwpK4ucXrZEdisLHzVLaFrNpwot1GjqsZPrR1Ms_cxrjRKjHm9wiJlV9LqNVtq3Z7w_-J9pwSoSpBLKFuVo2F6Z3srxe9lbt6n1JR9ksPTAsP/s800/WhatsApp%20Image%202022-07-07%20at%2018.06.52.jpeg" style="margin-left: 1em; margin-right:

1em;"></div>
<p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;"><o:p> </o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">Spesifikasi:<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">
</p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; mso-outline-level: 3;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; mso-outline-level: 3;"> 3. Dasar Teori[kembali]<o:p></o:p></p><p>

mso-fareast-font-family: "Times New Roman";"></p><div class="separator" style="clear: both; text-align: center;"></div>
<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;">
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">2.Op Amp - LM741<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;"><span lang="IN" style="color: #424242; font-family: "Georgia"; serif; font-size: 10pt; mso-ansi-language: IN; mso-bidi-font-family:

"Courier New"; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";">Op-Amp adalah salah

satu dari bentuk IC Linear yang berfungsi sebagai Penguat Sinyal listrik.

Sebuah Op-Amp terdiri dari beberapa Transistor, Dioda, Resistor dan Kapasitor

yang terinterkoneksi dan terintegrasi sehingga memungkinkannya untuk

menghasilkan Gain (penguatan) yang tinggi pada rentang frekuensi yang luas.

Dalam bahasa Indonesia, Op-Amp atau Operational Amplifier sering disebut juga

dengan Penguat Operasional.<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">Karakteristik

penguat ideal adalah:<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">Impedansi input

sangat besar ($Z_i \gg 1$). Impedansi input adalah sangat besar sehingga arus

input ke rangkaian dalam op-amp sangat kecil sehingga tegangan input sepenuhnya

dapat dikuatkan.<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">Konfigurasi PIN

LM741:<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div><br
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal;
margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt
412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><br
</p><div class="separator" style="clear: both; text-align: center;"><a
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HMyN5vISDINUG2miLoQ_2XC5jfGFq-f-HxHNit47u6SUQkFU7Fsy-q-UF-0vDeWOWfzLDJSWx7ZQ3SFdbI
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margin-right: 1em;"></div>
<p
align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom:
0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt
503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p
class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops:
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412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p
class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops:
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595.4pt 641.2pt 687.0pt 732.8pt;"><span lang="IN" style="color: #4e4e4e; font-family:
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"Courier New"; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New
Roman";">Respons

karakteristik kurva I-O:</p><div class="separator" style="clear: both; text-align:
center;"></div>
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margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom:

0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><span lang="IN" style="color: #222222; font-family: "Courier New"; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New

Roman";"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;"><span face=""Arial";sans-serif" lang="IN" style="color:

#222222; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";"> <span lang="IN" style="color: #222222; font-family: "Courier New"; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language:

AR-SA; mso-fareast-font-family: "Times New Roman";"><o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;"><span

face=""Arial";sans-serif" lang="IN" style="color: #222222; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";">3.RANGKAIAN CONSTANT-GAIN MULTIPLIER<span lang="IN" style="color: #222222; font-family: "Courier New"; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New

Roman";"><o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">Salah satu rangkaian op-amp yang paling umum adalah

pengali gain konstan pembalik, yang memberikan<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;"><span

face=""Arial";sans-serif" lang="IN" style="color: #222222; font-size: 10pt;

mso-ansi-language: IN; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";"> penguatan yang

tepat, terdapat pada Gambar 7 Dengan gainnya dirumuskan sebagai:<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
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<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
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</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">gambar 7

Pengali penguatan konstan non-inverting terdapat pada gambar 8, dapat

dirumuskan sebagai:<o:p></o:p></p>

</td>

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</tbody></table>

</div><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
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<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">gambar 8</p>

</td>

</tr>

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</div><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">Ketika beberapa rangkaian op amp dihubungkan dengan

susunan seri, maka muncullah yang namanya overall </p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">gain. Gambar 9 menunjukkan koneksi antara tiga

rangkaian op amp dengan rangkaian pertama merupakan </p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">rangkaian noninverting seperti Gambar 2 dan dua rangkaian

berikutnya merupakan rangkaian inverting seperti </p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">Gambar 7. Overall gainnya dapat dirumuskan sebagai: <span lang="IN" style="color: #222222; font-family: "Courier New"; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language: AR-SA;

mso-fareast-font-family: "Times New Roman";"><o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
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</p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">dimana<o:p></o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

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<div class="separator" style="clear: both; text-align: center;"><a href="https://1.bp.blogspot.com/-sZv02NZ7jas/YCIUnlIQ-cl/AAAAAAAAAFo/NO7tvmQghN8PI8LsWSVWN6aCPPcsoo06gCLcBGAsYHQ/s560/Screenshot%2B%2528191%2529.png" style="margin-left: 1em;

margin-right: 1em;"></div>
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</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">gambar 9<o:p></o:p></p>

</td>

</tr>

</tbody></table>

</div><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">Selain itu, beberapa rangkaian

op-amp juga dapat digunakan sebagai pembagi gain.<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">EXAMPLE<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;"><span face=""Arial"; sans-serif" lang="IN" style="color: #333333; font-size: 10pt; mso-ansi-language: IN; mso-bidi-language: AR-SA;

mso-fareast-font-family: "Times New Roman";">1. Tentukan tegangan output rangkaian pada Gambar 15.2

dengan input sinusoidal 2.5 mV!

Gambar 15.2

Solution:

The circuit diagram shows a series circuit with a voltage source $v_s(t) = 2.5 \cos(1000t) \text{ V}$ and a load impedance $Z_L = 100 \text{ ohms}$. The output voltage $v_o(t)$ is measured across the load impedance.

margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">maka<o:p></o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">2. Hitunglah tegangan output pada rangkaian Gambar

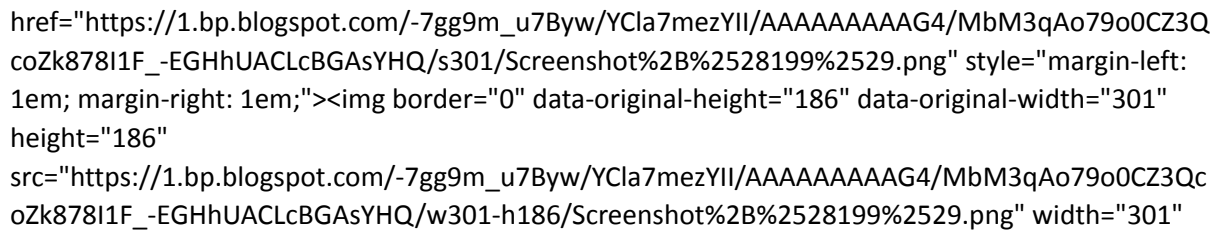
15.4 dengan tegangan input $120 \times 10^{-6} \text{ V}$!<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;"><o:p> </o:p></p><p>

align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">(Gambar 15.4)<o:p></o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">Solution:<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal;

margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">maka<o:p></o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">PROBLEM<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">
</p>

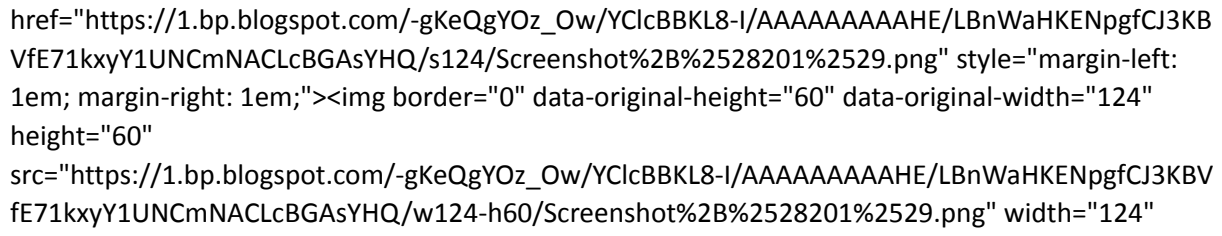
1. Tentukan tegangan output rangkaian pada Gambar 15.48 dengan tegangan input

3.5 mV rms!



The screenshot shows a circuit diagram for finding the output voltage. It includes a voltage source of 3.5 mV rms and a circuit with various components. The text is centered and the image is bordered.

Solution:



The screenshot shows a circuit diagram for finding the output voltage. It includes a voltage source of 3.5 mV rms and a circuit with various components. The text is centered and the image is bordered.

mso-ansi-language: IN; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";><o:p> </o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">maka<o:p></o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
</p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt;">>2. Tentukan tegangan output rangkaian pada Gambar

15.49 dengan input 150 mV rms!<o:p></o:p></p><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><div class="separator" style="clear: both; text-align: center;"></div>

<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">(Gambar 15.49)<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">Solution:<o:p></o:p></p><div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;">
<p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: center;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt 503.8pt 549.6pt 595.4pt 641.2pt 687.0pt 732.8pt; text-align: justify;">PILIHAN GANDA<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; tab-stops: 45.8pt 91.6pt 137.4pt 183.2pt 229.0pt 274.8pt 320.6pt 366.4pt 412.2pt 458.0pt

[illegible]

<!--[endif]--><span style="color: #505050; font-family: "Georgia"; serif; font-size: 11.5pt; mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;

mso-fareast-font-family: "Times New Roman";">Mempersiapkan Alat beserta Bahan seperti

yang telah tertera pada Sub Bab Alat dan Bahan di atas

Merangkai Rangkaian

Merangkai Rangkaian

Pada Rangkaian disambungkan input

tegangan AC agar dapat melihat bagaimana perbedaan respons gelombang input dan

[illegible]

Amatilah nilai input dan output dengan

menyesuaikannya dengan rumus yang ada, $P = \frac{1}{n} \sum_{i=1}^n P_i$

auto; text-align: justify;"><o:p> </o:p></p><p class="MsoNormal" style="background: white; line-height: normal; mso-margin-bottom-alt: auto; mso-margin-top-alt: auto; text-align: justify;">GAMBAR

RANGKAIAN<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">1. Gambar dah hasil simulasi rangkaian 15.1<o:p></o:p></p><div align="center">

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<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
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</td>

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<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 12pt; text-align: center;">Gambar 15.1<o:p></o:p></p>

</td>

</tr>

"Georgia";, serif; font-size: 11.5pt; mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";><o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;"><o:p> </o:p></p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p>

</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">Rangkaian 15.2<o:p></o:p></p>

</td>

</tr>

</tbody></table>

</div><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;"><span style="color: #505050; font-family: "Georgia";, serif; font-size: 11.5pt; mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;

mso-fareast-font-family: "Times New Roman";"><o:p> </o:p></p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
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</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">Simulasi 15.2<o:p></o:p></p>

</td>

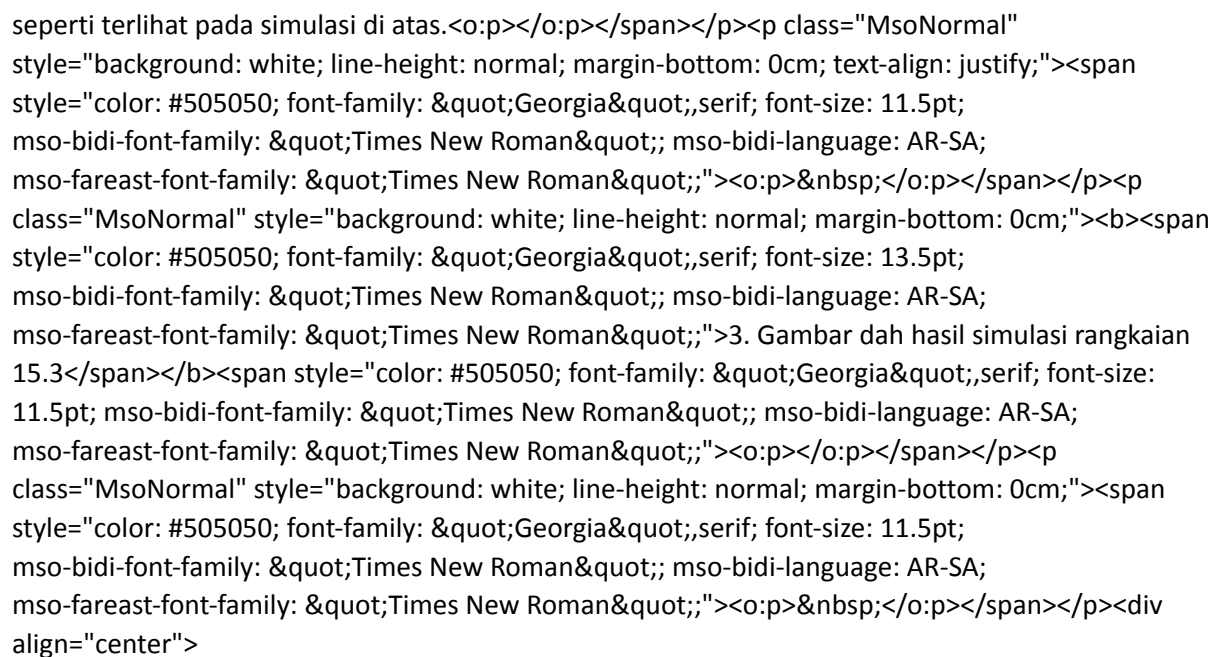
</tr>

</tbody></table>

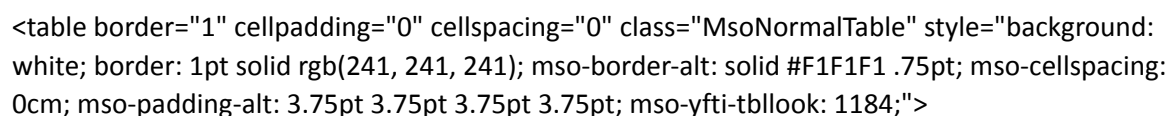
</div><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; mso-outline-level: 3;">Prinsip kerja<o:p></o:p></p><p class="MsoNormal" style="line-height: normal; margin-bottom: 0cm;">Pada

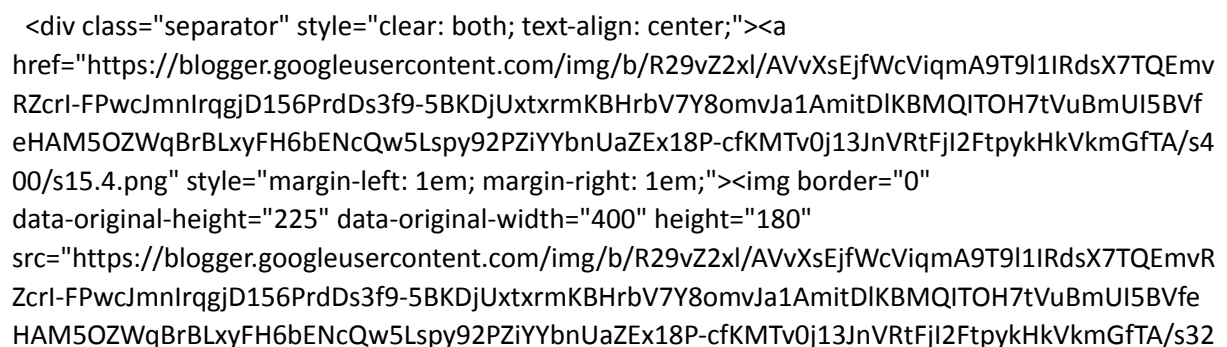
rangkaian inverting tengangan input (V_i) masuk ke kaki Negatif Op amp. Pada rangkaian diatas V_i sebagai tegangan input sebesar 2.5 mV di umpankan ke hambatan (R_1) sebesar 2k ohm dan di teruskan ke kaki negatif Op amp dimana terdapat suatu hambatan yang terhubung pada kaki inverting dan output yang disebut hambatan referensi (R_f) sebesar 200k ohm dan terajdi penguatan (gain) dengan rumus $V_{out} = (-R_f/R_1) V_i$ sebesar 100x sehingga output dari tengangan menjadi -0,25 V. pada rangakian inverting ini hasil dari sinyal output hasil penguatan berbeda fase dengan sinyal input

seperti terlihat pada simulasi di atas.



3. Gambar dah hasil simulasi rangkaian 15.3





0/s15.4.png" width="320" /></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
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<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">Rangkaian 15.3<o:p></o:p></p>

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<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p>

</td>

</tr>

mso-fareast-font-family: "Times New Roman";"><o:p> </o:p></p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p>

</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">Rangkaian 15.4<o:p></o:p></p>

</td>

</tr>

</tbody></table>

</div><p align="center" class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; text-align: center;"><o:p> </o:p></p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

<td style="border: none; padding: 3.75pt;">

<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p>

</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">Simulasi 15.4<o:p></o:p></p>

</td>

</tr>

</tbody></table>

</div><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm; mso-outline-level: 3;">Prinsip kerja<o:p></o:p></p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">Pada

rangkaian non invertng tengangan input (Vi) masuk ke kaki positif dari Op amp.

Pada rangkaian diatas Vi sebagai tegangan input sebesar 120 uV di

umpankan ke kaki positif Op amp. Terdapat Ri sebesar 2.4k ohm dan hambatan referensi (Rf) sebesar 240k ohm dan terjadi penguatan (gain) dengan rumus $V_{out} = (R_f/R_1 + 1) V_i$ sebesar 101x sehingga output dari tegangan menjadi 12.12 mV. pada rangkaian non inverting ini hasil dari sinyal output hasil penguatan sefase dengan sinyal input seperti

terlihat pada simulasi di atas.

5. Gambar di atas adalah hasil simulasi rangkaian 15.5.

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[!\[\]\(90fd06adc4bd3ab0f194c201536c8676_img.jpg\)](https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEjXXCBIZLWUgJlRP_LWEnu4yDp9nq4mNmUcUbcx_u-PtSjPecQ-6tGNCXx9icFxYLCFAv-nP1S8Mk1VPke3uRJJ5qb9EroIAv-wp3I-K9qxRIqOj2ar0eE81LOFYtFJNBjtoH5wfJw7nkYGgR74wmd5Clm4wNkQuQqYIak5oJMNJTHTpT6gFmAXVs_xNQ/s399/Rangkaian%2015.5.png)

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 12pt; text-align: center;">Rangkaian 15.5</p></p>
--

</p><div class="separator" style="clear: both; text-align: center;"></div>
<p></p><div align="center">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p></p>

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p></p>

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
</p></p>

Simulasi

Prinsip

kerja pada rangkaian multiple stage gain ini merupakan

gabungan rangkaian non inverting dan inverting yang di rangkai seri sehingga pada rangkaian terlihat bahwa rangkaian non inverting dengan V_i adalah tegangan input dan di perbesar dengan rumus non inverting (R_f/R_i+1) dan di dapat A_1 akan mengeluarkan output yang sefase dengan input. Output dari rangkaian non inverting 1 menjadi input pada rangkaian inverting dengan pembesaran ($-R_f/R_i2$) dan di dapat A_2 dan pembesaran dari rangkaian inverting dengan pembesaran A_2 menjadi input pada rangkain inverting selanjutnya dengan rumus yang sama sehingga pembesaran (gain) dan kita cara dengan rumus $A = (A_1 A_2 A_3)$ V_i dan sinyal yang di hasil kan akan sefase dengan

sinyal input.

6. Gambar

dah hasil simulasi rangkaian 15.6

"Georgia"; serif; font-size: 11.5pt; mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA; mso-fareast-font-family: "Times New Roman";><o:p> </o:p></p><div align="center">

<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

<tbody><tr>

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<div class="separator" style="clear: both; text-align: center;"></div>
<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">
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</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">Rangkaian 15.6<o:p></o:p></p>

</td>

</tr>

</tbody></table>

</div><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;"><o:p> </o:p></p><div align="center">

80u V adalah tegangan input dan di perbesar dengan rumus non inverting ($V_o/V_i = 1 + R_f/R_i$) dan di dapat A1 sebesar 110.3 V dan akan mengeluarkan output yang sefase dengan input. Output dari rangkaian non inverting 1 (110.3) menjadi input pada rangkaian inverting dengan pembesaran ($-R_f/R_i$) dan di dapat A2 sebesar -14.2 V dan pembesaran dari rangkaian inverting dengan pembesaran A2 menjadi input pada rangkain inverting selanjutnya dengan rumus yang sama sehingga pembesaran (gain) dan kita cari dengan rumus $A = (A_1 A_2 A_3) V_i$ sehingga $(110.3)(-14.2)(-14.2) 80u$ dan di dapat tegangan output 1.78V dan

sinyal yang di hasil kan akan sefase dengan sinyal input.

7. Gambar dah hasil simulasi rangkaian 15.7

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[!\[\]\(5d22036c339e10a9e6423d95a432e9e9_img.jpg\)](https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEimzP6w_gaBeiQQqPRUhnXMiSK06OFJpP9DBXasxoPxxWgkX4yKoNMNXaGPKAiVnqGFualJnRin_3G2HVG-tBCPgZUrFXZ8RsAfvaTY7IbNWCIJuURZth9M8l1GY0266dSGZCrLuTF8vfrcyWDj8C_5jDBp4YmvWpAaB5cam1_WEVmb4LCTf7tQtCrIw/s400/Rangkaian%2015.7.png)

</tr>

<tr>

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<p align="center" class="MsoNormal" style="line-height: normal; margin-bottom: 0cm; text-align: center;">Rangkaian 15.7<o:p></o:p></p>

</td>

</tr>

</tbody></table>

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<table border="1" cellpadding="0" cellspacing="0" class="MsoNormalTable" style="background: white; border: 1pt solid rgb(241, 241, 241); mso-border-alt: solid #F1F1F1 .75pt; mso-cellspacing: 0cm; mso-padding-alt: 3.75pt 3.75pt 3.75pt 3.75pt; mso-yfti-tbllook: 1184;">

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</p>

</td>

</tr>

<tr>

<td style="border: none; padding: 3.75pt;">

Simulasi Rangkaian 15.7

Prinsip kerja

Pada rangkain di atas merupakan rangakian multiple

stage gain yang di rangkain paralel sehingga di dengan satu input kita dapat menghasilkan output yang berbeda di tiap Op amp yang kita gunakan. pada rangkain di atas kita menggunakan inverting sehingga menghasilkan output yang beragama di tiap op amp nya tergantung berapa hambatan referensi (RF) dan hambatan input (Ri) yang kita atur yang mana rumus dari

inverting yaitu $V_i = -\frac{R_f}{R_i} V_i$

Video

1. Simulasi Rangkaian 15.1 (Inverting)

1. Simulasi Rangkaian 15.1 (Inverting)

[illegible]

[illegible]

13.5pt; mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";"><o:p></o:p></p><p
class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;"><br
</p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom:
0cm;"><span style="color: #505050; font-family: "Georgia"; serif; font-size: 11.5pt;
mso-bidi-font-family: "Times New Roman"; mso-bidi-language: AR-SA;
mso-fareast-font-family: "Times New Roman";">link file Rangkaian <a
href="https://drive.google.com/file/d/12clzcmtmclu7njko_g_BJfD3iOLA7zus/view?usp=sharing"
style="font-family: Georgia, serif; font-size: 15.3333px;"><span style="color: #2667cf;
text-decoration-line: none;">Klik disini</p><p class="MsoNormal" style="background:
white; line-height: normal; margin-bottom: 0cm;">Link datasheet Resistor <a
href="https://drive.google.com/file/d/1Lc9BZ_CBKVI0e1mGN3gAwSC8YI_jg5E/view?usp=sharing"
style="background-color: transparent; font-family: Georgia, serif; font-size: 15.3333px;"><span
style="color: #2667cf; text-decoration-line: none;">Klik disini</p><p class="MsoNormal"
style="background: white; line-height: normal; margin-bottom: 0cm;">Link datasheet
opamp <a
href="https://drive.google.com/file/d/1tAPO-usIKZHCeKJ8x6wmgb9yKy9dMVVF/view?usp=sharing"
style="background-color: transparent; font-family: Georgia, serif; font-size: 15.3333px;"><span
style="color: #2667cf; text-decoration-line: none;">Klik disini</p><p>

</p><p class="MsoNormal" style="background: white; line-height: normal; margin-bottom: 0cm;">link Html &a href="https://docs.google.com/document/d/1FiVqERJtWudNKCHBMnBKyrudzdlwHeuX/edit?usp=sharing&oid=115089933677001447793&rtpof=true&sd=true">Klik disini<o:p></o:p></p><div class="separator" style="clear: both; text-align: left;"><pre class="tw-data-text tw-text-large XcVN5d tw-ta" data-placeholder="Terjemahan" id="tw-target-text" style="background-color: white; color: #222222; text-align: justify;"><pre class="tw-data-text tw-text-large XcVN5d tw-ta" data-placeholder="Terjemahan" id="tw-target-text">
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style="font-family: georgia;"><br /></span><br /></span></div>

<div class="separator" style="clear: both; text-align: center;"><a
href="https://blogger.googleusercontent.com/img/b/R29vZ2xl/AVvXsEhwywcPbqfTdYtmozcbiH2GZxt
kzCeJMQENp88TNDkUWRmJ1rDcAb-z0MpAMaQUbcreQAsiQr3V9QfwA2pOI-hohLw92KyVFY3UjFp-g
CKrLPX172FLhjhJwC_hUQRfP2Y6-E3nxlctOKVJ-rUP-d2F4b7dJEDlcl3qsTijRZfS_RmTXhR0589MZry8g/s3
99/Hasil%20simulasi%2015.5.png" style="margin-left: 1em; margin-right: 1em;"></a></div><br />
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