

	Hard Fail	Soft Fail	Fair	Adequate	Good	Very Good	Excellent	Outstanding
Introduction:	No attempt, or	Fails to meet the	Description of	Description of	Filter	Filter	An excellent	An outstanding
background,	one with no	standards	filter advantages/	filter advantages/	advantages/	advantages/	description of the	description of the
filter types,	correct	described in the	disadvantages is	disadvantages is	disadvantages	disadvantages	advantages and	advantages and
advantages, and	advantages /	next category.	unclear or	somewhat	description is	description is	disadvantages of	disadvantages of
disadvantages.	disadvantages.		difficult to follow,	unclear or	generally	largely complete	the three filter	the three filter
			or there are	difficult to follow,	complete and can	and can be	types. Covers all	types. Covers all
15%			notable points	or there are some	be followed	followed without	of the key points	the key points in
			missing, or is just	key points	without much	much difficulty,	clearly and well	a clear and
			a list of features	missing, or is just	difficulty, with a	with a good	discussed with	concise manner.
			with minimal	a list of features	good discussion.	discussion. Good	reference to	Explains why the
			discussion. Some	with some	Some examples	number of	performance	performance
			examples of real	discussion. Some	of real	examples of real	characteristics.	characteristics
			applications	examples of real	applications	applications	Extensive number	are important
			presented.	applications	discussed with	presented,	of examples of	(i.e. analysis
				discussed.	references.	discussed, and	real applications	rather than just
						referenced.	presented with	presenting the
							justification of	features).
							benefit of that	Extensive number
							particular filter,	of examples of
							including a range	real applications
							of references.	presented with
								justification of
								benefit of that
								particular filter,
								with a selection
								of good reference
								sources.



Filter circuit	No attempt or	Fails to meet the	Calculations are	Calculations are	Calculations and	Calculations and	Calculations and	Calculations and
design	use of incorrect	standards	presented	presented with	working are	working are	explanations are	explanations are
calculations and	design formulae.	described in the	without	limited	largely complete,	largely complete	very detailed,	very detailed,
description.	acsign formulae.	next category.	explanation, or	explanation, or	but some steps	and clear, but	show the	show the
description.		next category.	without working;	incomplete	are not covered	some steps are	equations being	equations being
250/			_	· ·		•	used and have	'
35%			or unusual choice	working; or	or are not clear.	not covered in		used and have
			of component	unusual choice of	Reasonable	necessary detail.	full working out.	full working out.
			values. Design	component	component	Reasonable	Explanations are	Explanations are
			largely meets the	values with some	values are used.	component	clear and	clear and
			specification.	explanation.	Design largely	values are used.	demonstrate	demonstrate
				Design largely	meets	Design largely	understanding of	understanding of
				meets the	specification.	meets	the design	the design
				specification.		specification.	process in	process in
							relation to the	relation to the
							requirements.	requirements and
							Reasonable	performance.
							component	Reasonable
							values are used	component
							and have	values are used
							justification for	and have
							the choices	justification for
							made. Design	the choices
							meets	made. Design
							specification.	meets
							-1	specification.
								op comount on
	1					1	1	



Results: Simulation results 25%	No attempt or clearly incorrect results.	Fails to meet the standards described in the next category.	Simulation results are present and labelled, but are not discussed, or some simulation results are missing.	Simulation results are present and labelled, but are not discussed in a clear fashion.	Simulation results are largely complete, well labelled, and are discussed, but some minor elements are missing; or has some parts missing. Analysis of low frequency results is inadequate.	Simulation results are largely complete, well labelled with suitable axis range, and are discussed, but discussion or analysis of the results is not clear in places. Analysis of low frequency results	Most simulation results clearly highlight the performance of the circuits and are well presented. The output of the simulations are discussed and compared to the expected behaviour.	Most simulation results clearly highlight the performance of the circuits and are well presented. The output of the simulations are discussed and compared, in detail, to the expected
Schematic design in LTSpice 5%	No attempt or all are incomplete; or all fail to simulate.	Fails to meet the standards described in the next category.	Schematic layouts are messy and difficult to read; more than one schematic is not present; or more than one schematic does not simulate.	Schematic layouts are messy and difficult to read; or at most one of the schematics is not present; or at most one of the schematics does not simulate.	Schematic layouts are generally clear but could have been presented in a way that is much clearer to the reader.	is adequate.  Schematic layouts are largely clear but may have some elements that are messy, such as upside down voltage sources.	Schematics are tidy and are presented in a format that is familiar to electronic engineers.	behaviour.  Schematics are presented in a professional format for electronic engineers, with key nets labelled.



Discussion:	No attempt; or	Fails to meet the	Discussion points	Discussion points	Discussion points	All discussion	All discussion	All discussion
discussion points	values not from	standards	are largely	are largely	are largely clear	points covered	points covered	points are
(high cut-off	E24 series; or	described in the	missing. Little or	unclear or	but fail to justify	and are largely	with most	covered
frequency,	combination of	next category.	no analysis	unjustified. Some	some points.	clear but have a	discussion points	comprehensively
amplification,	parts to achieve a		attempted.	analysis	Some analysis of	small point	covered	in an intelligent
results of	value.			attempted.	points.	missing. Good	comprehensively	manner, with
changing to E24,						analysis of points.	in an intelligent	extensive
tolerance) and							manner, with	analysis.
your reflection							analysis.	
10%								
	Hard Fail	Soft Fail	Fair	Adequate	Good	Very Good	Excellent	Outstanding



Clarity of	No attempt or	Fails to meet the	Ideas difficult to	Ideas difficult to	Text written in	Text written in	Complex ideas	Complex ideas
language and	complete lack of	standards	follow with little	follow. Spelling	students own	students own	are logically	are logically
overall	structure.	described in the	or no use of	and grammar	words is	words is clear.	developed and	developed and
presentation:		next category.	illustration.	contain a large	reasonably clear.	Ideas easy to	clearly explained.	clearly explained.
Logically written			Spelling and	number of	Some effort is	follow without	Document makes	Clear, concise and
text; grammar,			grammar contain	mistakes; Figures	required to	difficulties. Clear	good use of space	correct use of
spelling, clear			a large number of	are of poor	follow ideas.	use of diagrams	and material is	language.
communication			mistakes. There is	quality, with	Clear use of	and figures.	structured well.	Document makes
of ideas; legible			only very limited	inappropriate	diagrams and	Largely correct	Well-balanced	good use of space
and relevant			text.	scaling, or text	figures. Largely	grammar and use	sections.	and material is
figures,				that is too small.	correct grammar	of language.	Excellent use of	structured well.
consistent figure				It may be unclear	and use of	Document of	diagrams. All	Well-balanced
numbering and				what message	language.	around	diagrams are	sections and
captions; quality				diagrams convey.	Document of	appropriate	referenced	figures cross-
of document					around	length. Most	appropriately. All	referenced in
					appropriate	diagrams clear.	figures and	text. Excellent
10%					length. Most	All diagrams are	diagrams are	use of diagrams
					diagrams clear.	referenced	cross-referenced	showing the data
					Most diagrams	appropriately.	in text.	in an accessible
					are referenced	Most figures and		form for the
					appropriately.	diagrams are		reader. All
						cross-referenced		diagrams are
						in text.		referenced
								appropriately.