

View Report

R1

(Number of First Attempts: 41)

MCQ

Question 1 Difficulty: 1

What is the appropriate time series model selection criteria?

R square	<div></div>	0	(0 %)
Adjusted R square	<div></div>	0	(0 %)
→ AICc	<div></div>	41	(100 %)
None of the above	<div></div>	0	(0 %)

Average Grade: 1 / 1 (100 %)

Question 2 Difficulty: 1

What does automated model selection do in the context of ARIMA models?

→ Based on a model selection metric [one of R-square, AICc, BIC, etc], search the space of ARIMA models (including seasonal variants) trying different values of p, d and q to optimize the model selection metric	<div></div>	37	(90.24 %)
Decide automatically	<div></div>	0	(0 %)

Average Grade: 0.9 / 1 (90.24 %)

if we should
use a time
series or cross
sectional
model

All of the
options are
correct  4 (9.76 %)

Search the
space of
ARIMA
models trying
different
values of p, d
and q to
optimize
RMSE and
MAPE, while
also
automatically
applying the
Ljung-Box test

 0 (0 %)

Question 3 Difficulty: 1

For a seasonal ARIMA model, $ARIMA(p,d,q)(P,D,Q)$, is the seasonal difference D applied first or last?

Seasonal
difference is
applied last  4 (9.76 %)

→ Seasonal
difference is
applied first  37 (90.24 %)

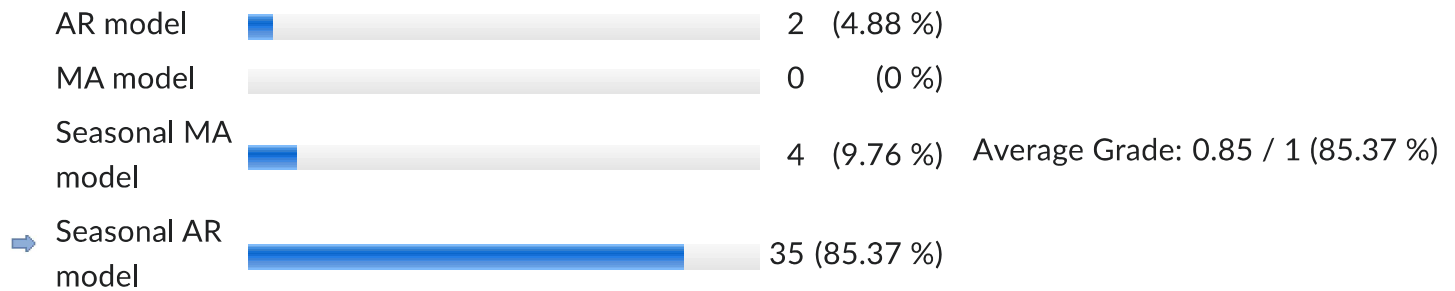
There is only a
single
difference
parameter, so
the question
is invalid

Average Grade: 0.9 / 1 (90.24 %)

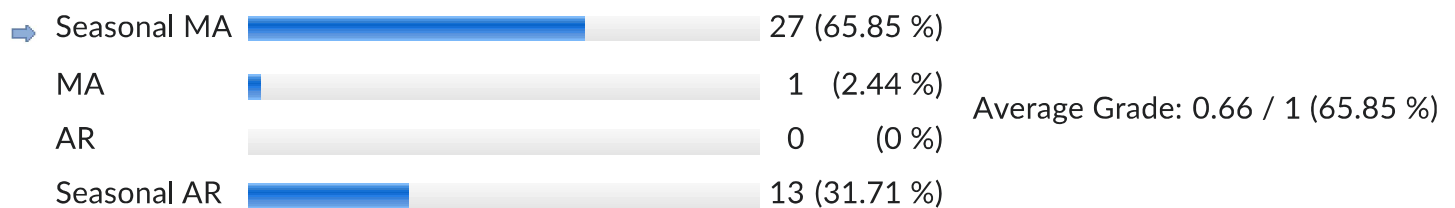
It does not
matter  0 (0 %)

Question 4 Difficulty: 1

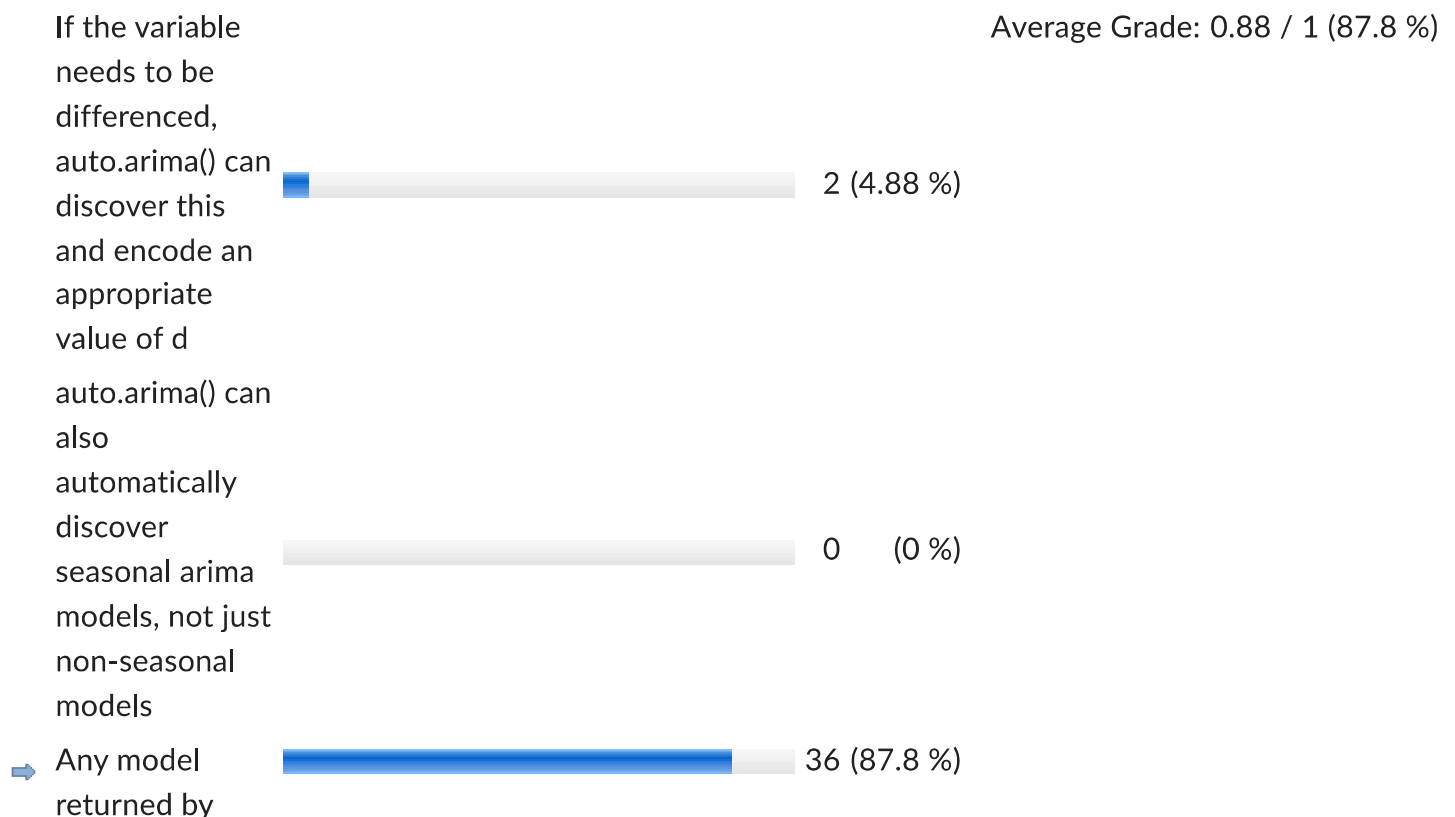
Consider an ACF on a monthly variable that has an exponentially decaying relationship at lags 1,12,24,36. Other ACF columns are close to 0 [or not significant]. What is the most likely model?

**Question 5** Difficulty: 1

Consider a PACF for a variable with rapidly decaying columns at lag 1, 12, 24, 36, etc, and other columns close to 0 [or not significant]. Absent any other information, what is the most likely model?

**Question 6** Difficulty: 1

Which of the following is **not** guaranteed by the output of auto.arima() in R?



auto.arima() will
have residuals
that will pass
the Ljung-Box
test

Any model
returned by
auto.arima() will
include a
constant unless
explicitly
prevented to by
the user.

 3 (7.32 %)

Question 7 Difficulty: 1

In which situation will a pure inspection of ACF and PACF likely yield the clearest hypothesis on data generating process (DGP)?

Average Grade: 0.93 / 1 (92.68 %)

→ When the
actual DGP
is purely AR
or MA, but
not mixed

 38 (92.68 %)

When the
actual DGP
is ARMA,
with $p \geq 1$
and $q \geq 1$

 0 (0 %)

When the
actual DGP
has seasonal
patterns,
regardless of
whether
mixed
AR/MA or
pure

 2 (4.88 %)

When the
actual DGP
has no
seasonal
patterns,

 1 (2.44 %)

regardless of
whether
mixed
AR/MA or
pure

Question 8 Difficulty: 1

For manual determination of the structure of an ARIMA model (not using `auto.arima()`), which of the following is the most appropriate?

Average Grade: 0.98 / 1 (97.56 %)

If ACF/PACF
inspection
yield
ambiguous
results, it
denotes that
we need to
difference
the data
again

0 (0 %)

None of
these

1 (2.44 %)

→ In ambiguous
situations
(ACF/PACF
inspection
yield
multiple
possibilities),
do not
prematurely
eliminate any
possibility,
but keep all
options, fit
them, and
check AICc
and Ljung-
Box tests
ACF/PACF
inspection
should
always yield

40 (97.56 %)

0 (0 %)

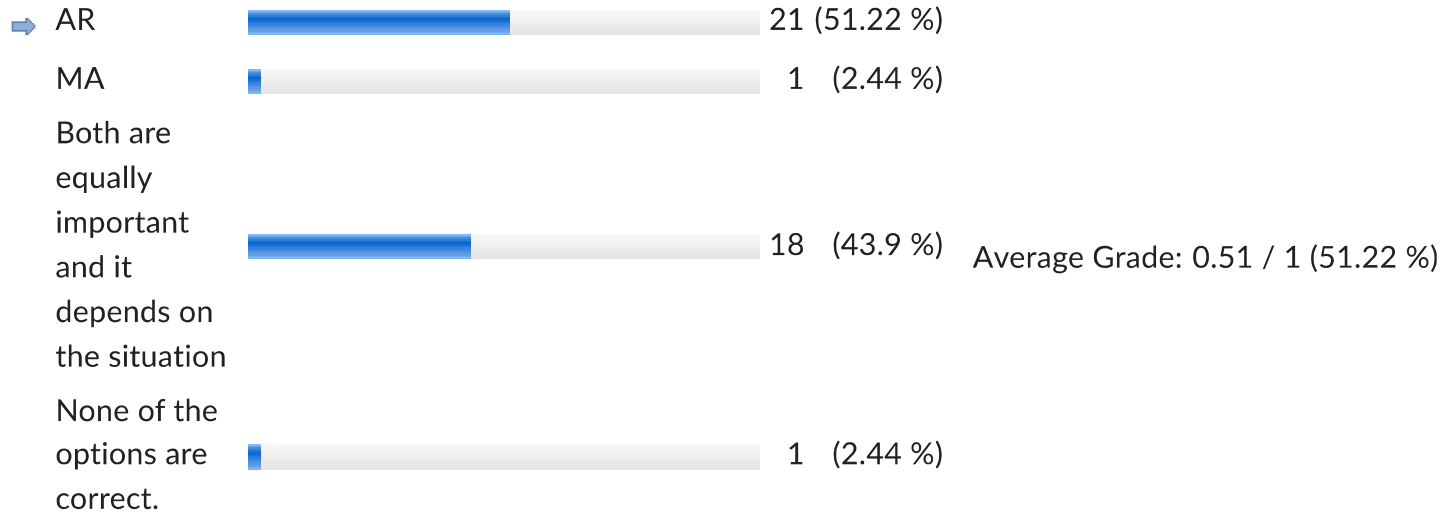
unambiguous

clear

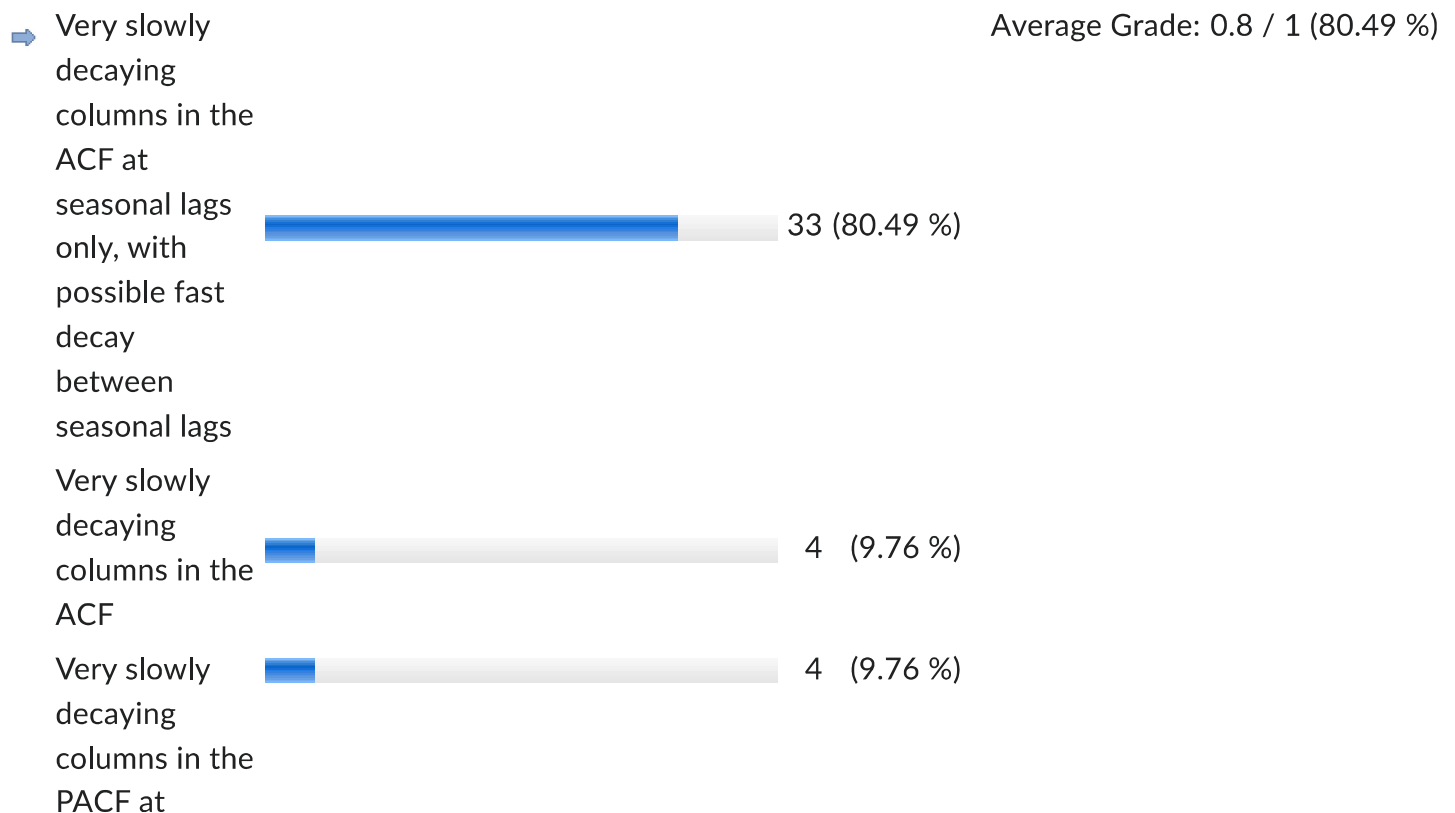
possibilities

Question 9 Difficulty: 1

For an ARMA model, which of the components are more important in determining large scale forecast accuracy?

**Question 10** Difficulty: 1

For processes that are non-stationary but which require a seasonal difference to be stationary, which of the following are most likely to be visible?



seasonal lags

only, with

possible fast

decay

between

seasonal lags

Very slowly

decaying

columns in the

PACF



0

(0 %)