1. How do you borrow stocks? (From whom, etc.) What is the borrow rate?

Stock borrows are the acts in which a brokerage loans out shares of a stock to an investor. Most often, traders borrow stocks in order to sell them short, buying additional shares at a lower price to return the borrowed stock. Just as in a traditional loan system, stock borrows entail paying interest to the loaning brokerage.

However, the interest rate on stock borrows is set by the market itself rather than prevailing interest rates. In general, stocks that are highly volatile or are in high demand by short sellers are more difficult to borrow since they are scarcer and typically come with higher interest rates. For example, biotech stocks or stocks like Tesla that have high volatility and significant interest among traders will be harder to borrow or, at some brokerages, cannot be borrowed. Stable large-cap stocks such as Apple or Exxon Mobil, on the other hand, are typically straightforward to borrow and brokerages charge lower interest rates for these stocks.

2. Give an example of a stock which is currently very expensive to borrow? Can the borrow rate be equal to 300% per year? Explain.

TILRAY (TLRY) has a borrow fee of 67%. Here is a list of the most expensive stocks to borrow https://markets.businessinsider.com/news/stocks/13-stocks-most-expensive-short-data-show-clovis-highest-fees-2019-12-1028738522. As you can see, a lot of them are canopy stocks. If we look at the canopy industry, its stock prices have been falling for a long time and there must be a high borrow interest. That matches the high borrow fee on those stocks.
No, it can not exceed a certain amount. That amount is the profit margin that a borrower makes by shorting the stock now and return the stock with a future price. That margin is limited.

3. Explain the notion of implied cost-of-carry for futures. Give examples with WTI and E-mini S&P contracts.

Or cost of carry = Futures price – spot price

BSE defines the cost of carry as the interest cost of a similar position in cash market and carried to maturity of the futures contract, less any dividend expected till the expiry of the contract.

Example:
Suppose the spot price of scrip X is Rs 1,600 and the prevailing interest rate is 7 per cent per annum. Futures price of one-month contract would therefore be:
1,600 + 1,600*0.07*30/365 = Rs 1,600 + Rs 11.51 = 1,611.51
Here, Rs 11.51 is the cost of carry.

4. Can you borrow an S&P futures contract? How so?

It is not possible to short an individual stock on a futures exchange. It is possible, however, to short stocks, in that you can short a futures contract for an index. In the case of a short on a futures exchange, you are not selling something you don't own. You don't have to borrow a security in order to sell it. You are basically buying a contract that requires you to sell a commodity at some point in the future for a price determined today. In other words, when you short a security, you are selling something you don't own and receiving the proceeds of your sale. When you short a futures contract, you are not receiving any proceeds. Like a long futures contract, you are required to put down "margin" — essentially a good faith deposit — with the exchange to guarantee your trade (this is distinct from margin in a securities trade, which is the use of borrowed money to security).

5. Can you borrow options? Swaps?
No, you don't need to borrow options; you write an option. Swaps are bilateral contracts that require two parties. You cannot simply borrow a swap.

6. Are exotic options centrally-cleared?

Some of them are.

7. Can you short ETFs? How?

Yes, by calling your broker.

8. How could the term-structure of volatility (as a function of maturity) affect the value of down-and-out barrier options?

$$c_{\mathrm{do}} = c - c_{\mathrm{di}}$$

$$c_{\mathrm{di}} = S_0 e^{-qT}(H/S_0)^{2\lambda} N(y) - K e^{-rT}(H/S_0)^{2\lambda-2} N(y - \sigma\sqrt{T})$$

$$c = S_0 e^{-qT} N(d_1) - K e^{-rT} N(d_2)$$
$$p = K e^{-rT} N(-d_2) - S_0 e^{-qT} N(-d_1)$$

where

$$d_1 = \frac{\ln(S_0/K) + (r - q + \sigma^2/2)T}{\sigma\sqrt{T}}$$
$$d_2 = \frac{\ln(S_0/K) + (r - q - \sigma^2/2)T}{\sigma\sqrt{T}} = d_1 - \sigma\sqrt{T}$$

9. What is the option-implied forward price of a stock/index/ETF?

It is a calculated derived forward price based on the current option prices. Options traders provide one community of opinions worth considering when evaluating short-term prospects for stocks. While they as a group could be totally wrong, they differ importantly from analysts and academics, because they are risking their money on their opinions.

10. What is the implied dividend? Describe the concept of implied dividend for hard-to-borrow stocks.

Dividend yield estimated using put–call parity from the prices of calls and puts with the same strike price and time to maturity.

$$q = -\frac{1}{T}\ln\frac{c - p + Ke^{-rT}}{S_0}$$