



BRAINWARE UNIVERSITY

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Brainware University
398, Ramkrishnapur Road, Barasat
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Term End Examination 2023
Programme – MBA-2018/MBA-2019/MBA-2020/MBA-2021
Course Name – Financial Derivatives
Course Code - FM402
(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Identify item for which standardised futures contract does not exist.
- | | |
|-------------------|----------------|
| a) Common stock | b) Stock Index |
| c) Treasury bills | d) Gold |
- (ii) Calculate optimal hedge ratio if $CovFS = 1$, $\sigma F = \sigma S$
- | | |
|------------------|--------------------------|
| a) less than one | b) greater than one |
| c) equal to one | d) any value is possible |
- (iii) Examine Spot market speculations conclude on the limitations of this technique.
- | | |
|----------------------------|----------------|
| a) Huge fund requirements | b) High risk |
| c) Short sale not possible | d) All of them |
- (iv) Evaluate different strategies and select an appropriate speculative strategy when speculator expects fall in price.
- | | |
|--|---|
| a) Long futures and short on underlyings at t_0 | b) Long on futures at t_0 and short the same at t_1 |
| c) Short on futures at t_0 and then long the same at t_1 | d) Long on underlyings at t_0 and short on futures at t_0 |
- (v) Strike price in option is defined as-
- | | |
|-------------------------------------|---------------------------|
| a) Market price of underlying asset | b) Market price of option |
| c) Exercise price | d) Premium |
- (vi) Show the nature of Profit/loss curve of put buyer and writer.
- | | |
|--------------------|----------------------------------|
| a) Rising, falling | b) Falling, rising |
| c) Mirror image | d) Any combinations are possible |
- (vii) Identify Tailor made options from the alternatives shown below-
- | | |
|--------------------|---------------------------|
| a) OTC option | b) Exchange traded option |
| c) American option | d) European option |
- (viii) Apply your knowledge write the name of theory used in valuing an option.
- | | |
|---------------|---------------------------|
| a) PPT theory | b) Put call parity theory |
|---------------|---------------------------|

- c) Carry cost model
d) Binomial model
- (ix) Evaluate the formula Option delta to decide on the sensitivity of option price with respect to change in
a) Price of underlyings
b) Change of time
c) Change in risk free interest
d) Change in volatility
- (x) Evaluate Theta value in option and indicate sensitivity of option price due to-
a) Change in asset price
b) Time left for maturity
c) Price of underlyings
d) Change in market interest
- (xi) Analyze the activities of each alternatives given below to identify one, that is most similar to stock broker.
a) Local
b) Future commission merchant
c) Pit broker
d) Floor broker
- (xii) Both party gets and pays cash in derivatives. It is observed in-
a) Forward
b) Futures
c) Options
d) SWAPS
- (xiii) Identify actual underlying asset of first derivative instrument in India.
a) share
b) Index
c) bond
d) commodity
- (xiv) Identify the committee recommend separation of cash and derivative segment of an exchange in India.
a) Tandon Committee
b) Sachar Committee
c) Chore Committee
d) Gupta Committee
- (xv) Trace from the alternative given below, that does not show the Features of Forward contract.
a) exchange trading
b) no third party
c) no speculation
d) zero sum game

Group-B

(Short Answer Type Questions)

3 x 5=15

2. Define a call option (3)
3. Explain the concept of premium, strike price and strike date used in option. (3)
4. Evaluate the situation when American call option is paying dividend. (3)
5. Apply your knowledge to explain over the counter option. (3)
6. Evaluate the concept of interest rate caps (3)

OR

evaluate the concept of floor option (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. explain different features of Index futures. (5)
8. If spot price is Rs.80, exercise price (X)=Rs.85, time (t) = 2 months, risk free interest rate (r) =0.06 and call premium (C) =Rs.2. then analyse relation among variables stated above and calculate put premium. (5)
9. Spot price (S)= Rs.100, upside and downside change are 25% and 20% respectively. Strike price of European call=Rs.100, Expiry time 1 year. Risk free rate = 0.06. Calculate option price using Binomial model. (5)
10. Define spread strategy. (5)
11. Show properties of Forward rate agreement (5)

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12. Evaluate futures derivatives and decide on its benefits.

(5)

OR

In commodity futures upper boundary is possible but no lower boundary. Evaluate this statement.

(5)
