**EXAM - QUESTION 8**

**Business Description:**

FortyEight Inc. (FE), a Research and Development company, has developed a targeted delivery platform using exosomes and other nanoparticles engineered from stem cells, which can selectively target tumor sites and deliver their therapeutic payload directly to cancer cells. This approach offers significant advantages in terms of tumor selectivity and efficacy compared to current treatments and can potentially provide a new avenue to successfully treat a wide range of cancers.

**Transaction Description:**

FE is seeking a strategic partner to successfully execute its R&D program and realize its aims - to lead the way in the development of first-in-class cancer therapeutics and to position the company at the forefront of the emerging microRNA-based clinical diagnostics field.

PharmaCo, a strategic partner, that is in the business of finding revolutionary drug solutions are interested in investing the $125 million that FE is seeking to fund its 5-year pre-commercialization phases (Phase I, II and III clinical studies) and continue to pay FE 5.0% royalty fee (a percentage based of PharmaCo’s drug sales) post-commercialization for 15 years thereafter. During Phases I, II and III, the $125 million development cost will be distributed as follows:



**Industry Description – Addressable Market**

FE’s therapeutic technology presents an attractive option for biopharmaceutical companies keen on expanding in the growing targeted cancer therapy market. According to Precedence Research, the global oncology market size is expected to be worth around US$238 billion 5 years from now and grow at an average CAGR of 5% from Year 6 – Year 20.

PharmaCo is estimating that once FE’s new drug is commercialized they will penetrate the following market shares of this addressable market:



Companies in the market with similar drugs are listed below including the sales, stock price and average market stock variance:

 

**Operating Assumptions of FortyEight**:

Gross Margin per year: 85%

Operating Expenses as percentage of revenues 25%

**DCF Valuation and other Option Pricing Assumptions:**

WACC: 35%

No Terminal Value

Risk Free Rate: 2.5%

Calculate the Value of FortyEight Inc. using Black-Scholes approach to the Option Pricing Model