

**UNIVERSITY OF KWAZULU NATAL
SCHOOL OF ENGINEERING**

Subject module and code: **ENGINEERING ENTREPRENEURSHIP : ENEL4EEH2**

October 2013 Examination

Duration: 120 minutes

Total marks: 120

Examiner: Mr D Engelbrecht

External Examiner: Mr B Harrison

Instructions:

- 1. This examination comprises two sections: an essay question in Section A and sixty multiple choice questions in Section B.**
- 2. It is recommended that you devote your time equally to the two sections.**
- 3. Answer Section A in the answer book provided and Section B on the MCQ answer sheet template. Use a soft pencil to mark your choices on the MCQ answer sheet.**

SECTION A

60 marks

Read the case study entitled **Ride-eye** and answer the following question:

Ride-eye represents a limited amount of innovation (because it is effectively a tweaked “in-car dashboard camera” redesigned for use mounted to a bicycle handlebar) but has proved an attractive prospect for small scale subscribers who have chosen to associate themselves with the successful launch of the product. You are required to identify the features and benefits of the project idea, and to propose a marketing strategy to the Ride-eye founders. Your answer must demonstrate that you have identified the elements that characterise the product, and must use supporting argument for all of your marketing strategy proposal elements.

A suggested length for your answer is about 1,000 words (3 to 4 pages).

Ride-eye

Kickstarter is one of a number of crowd funding platforms for gathering money from the public, which circumvents traditional avenues of investment. Started in April 2009 in New York, the private for-profit company employs 64 people who maintain a “project funding request” website.

The business serves as a facilitation agency for project creators to promote their projects and seek funding pledges. Every project creator sets their project's funding goal and deadline. If people like the project, they can pledge money to make it happen. If the project succeeds in reaching its funding goal, all backers' credit cards are charged when time expires. If the project falls short, no one is charged. The founders of Kickstart point out that this model

represents less risk for everyone. "If you need \$5,000, it's tough having \$1,000 and a bunch of people expecting you to complete a \$5,000 project."

Of the projects that have reached 20% of their funding goal, 82% were ultimately successfully funded. Of the projects that have reached 60% of their funding goal, 98% were successfully funded. Projects either make their goal or find little support.

Kickstarter takes 5% of the funds raised but claims no ownership over the projects and the work produced by project creators. The web pages of projects launched on the site are permanently archived and accessible to the public. After funding is completed, projects and uploaded media cannot be edited or removed from the site.

There is no guarantee that people that post projects on Kickstarter will deliver on their projects, use the money to implement their projects, or that the completed projects will meet backers' expectations. Kickstarter advises backers to use their own judgment on supporting a project. They also warn project leaders that they could be liable for legal damages from backers for failure to deliver on promises. Projects can also fail even after a successful fund raise when creators underestimate the total costs required or technical difficulties to be overcome. This is a standard and accepted risk for anyone choosing to finance an entrepreneurial venture!

As of July 24, 2013, Kickstarter had facilitated 107,645 launched projects (with a further 3,990 projects in progress), with a success rate of 43.99%. The total number of dollars pledged was \$717 million. It is useful to point out the rapid growth of the business: in the year 2010, Kickstarter had 3,910 successful projects and \$27.6 million. The corresponding figures for 2011 were 11,836 successfully funded projects and \$99.3million pledged; in 2012, 18,109 successfully funded projects to a pledged value of \$319.7 million.

Creators categorize their projects into one of 13 categories: Art, Comics, Dance, Design, Fashion, Film and Video, Food, Games, Music, Photography, Publishing, Technology and Theatre. Of these categories, Film & Video and Music are the largest categories and have raised the most amount of money. These two categories alone account for more than half of Kickstarter projects and along with Games, account for over half the money raised.

In the Technology category, one of the current project creators is seeking \$32,000 by 15th October 2013. As at 16th September, with 29 days to go, 187 backers had pledged \$23,795 in support (representing an average investment of about \$127). The following report is drawn from the project creators' pitch to investors on the Kickstarter website.

Cycling is in our blood. We've all had our share of close calls, but nothing will stop us from experiencing the freedom that bikes embody. Last year my friend was seriously injured in a hit-and-run doing the thing he loved most, and I promised him he would never have to ride with that fear again. Today, I'm proud to introduce Ride-eye. It's time to fight back.

In airplanes, a black box is a precision electronic device which records what happened before a crash. This information is invaluable when determining exactly what went wrong. Since cyclists usually ride alone, knowing how an incident occurred is extremely important. Ride-eye is an objective, ever-present witness that protects you against hit-and-runs and false claims. It's the world's first black box camera for your bike.

Ride-eye couldn't be easier to use. A single press of its button turns it on and starts recording automatically. Another press, and it turns off. Ride-eye's internal microprocessor handles the rest.

Ride-eye uses state-of-the-art lithium cells and efficient power management to achieve an impressive battery life of 24 hours. Even if your daily commute is an hour long, Ride-eye will finish the month with charge to spare.

Ride-eye continuously records high-definition (1280 x 720) video onto its internal memory, which can hold 2.5 hours of video. The 120° optics cover an impressively wide field of view, recording every event and even allowing you to identify license plates in most incidents (left hand turn, right hook, and opening doors). When the internal memory is full, Ride-eye automatically removes the oldest video to make room for new recordings. You'll never have to worry about downloading after each ride- it will simply be there when you need it.

In the event of an incident, a single press of the button stops recording and saves the file. If you can't do it yourself, Ride-eye's BlackBox sensor will do it for you when it detects a crash. At the center of the BlackBox system is a triple-axis accelerometer which measures Ride-eye's movements at a rate of 1,600 times per second. When an impact is detected, the corresponding video file is saved to protect it from being overwritten.

Ride-eye is unlike anything you've ever seen, and its design reflects that. We start with precision machined aircraft-grade aluminum and hard-anodize it for a brilliant, durable finish. The Lexan inlays are laser cut to a precise, water resistant fit, and sealed with an Armadillo scratch-resistant coating. Every part is manufactured without compromise.

After months of careful engineering, prototyping, and testing, we are ready to move into manufacturing. One hundred percent of the funds raised on Kickstarter will be used for Ride-eye's first production run. We have already established contracts with our production partners and vendors- we just need your help meeting the minimum order quantities to bring Ride-eye to life.

September-October: PCB manufacturing commences. Casings machined. Injection molding tooling cut. Battery and miscellaneous component orders placed.

October- November: Receive assembled PCB's. Individual PCB testing and component assembly. Casings anodized and graphics applied. Injection molded parts received and assembled. Battery packs welded and assembled.

November- December: Final assembly and testing. Each camera will be individually tested for 24 hours before shipment. Finished product packaged and shipped to backers.

SECTION B

60 marks

Answer the following 60 multiple choice questions on the MCQ answer sheet using a soft pencil.

- 1 Established firms with an entrepreneurial emphasis are:
 - a) innovative, risk adverse, and take a “wait and see” posture
 - b) take a “wait and see” posture, are innovative, and are risk taking
 - c) proactive, innovative, and risk taking
 - d) proactive, not innovative, and risk taking
 - e) take a “wait and see” posture, are not innovative, and are risk adverse
- 2 Established firms with an orientation to behave entrepreneurially practice:
 - a) general entrepreneurship
 - b) commercial entrepreneurship
 - c) mega-entrepreneurship
 - d) statutory entrepreneurship
 - e) corporate entrepreneurship
- 3 The three primary reasons that people become entrepreneurs and start their own firms are to:
 - a) pursue their own ideas, realize financial rewards, and eliminate risk in their lives
 - b) be their own boss, pursue their own ideas, and realize financial rewards
 - c) take big risks, be their own boss, and do what they were “born” to do
 - d) do what they were “born” to do, be their own boss, and capture more of the spotlight
 - e) capture more of the spotlight, pursue their own ideas, and take big risks
- 4 Some entrepreneurs never grow their firms beyond their immediate control. This scenario is most likely to happen if a person becomes an entrepreneur primarily to:
 - a) make money
 - b) satisfy a longing for independence
 - c) capture the spotlight
 - d) pursue a particular set of ideas
 - e) take risks
- 5 The ability to translate thought, creativity and imagination into action and measurable results is most closely related to which of the following characteristics of successful entrepreneur?
 - a) passion for the business
 - b) product/customer focus
 - c) tenacity despite failure
 - d) a desire to be in the spotlight
 - e) execution intelligence
- 6 Established firms with an entrepreneurial emphasis are proactive, innovative, and risk adverse.
 - a) True
 - b) False
- 7 Which of the following is not a personality trait or characteristic common among entrepreneurs?
 - a) creative
 - b) tenacious
 - c) self-confident
 - d) intolerant of ambiguity
 - e) achievement motivated

- 8 It is reasonable to agree with the statement that “investors often cite the _____ as their most important criterion in the decision to fund new ventures”.
- a) strength of the business idea
 - b) strength of the industry the new firm is entering
 - c) strength of the new venture’s marketing plan
 - d) strength of the entrepreneur
 - e) financial position of the new venture
- 9 _____ is the process of creating something new, which is central to the entrepreneurial process.
- a) Creative destruction
 - b) Modernism
 - c) Execution
 - d) Creativity
 - e) Innovation
- 10 A(n) _____ is a favorable set of circumstances that creates a need for a new product, service, or business.
- a) opportunity
 - b) idea
 - c) design
 - d) prospect
 - e) scheme
- 11 Entrepreneurship is the process by which individuals pursue opportunities without regard to resources they currently control.
- a) True
 - b) False
- 12 An opportunity has four essential qualities; it is
- a) showy, robust, timely, and practical
 - b) practical, realistic, timely, and attractive
 - c) technologically sophisticated, durable, practical, and timely
 - d) attractive, durable, timely, and anchored in a product, service, or business that creates or adds value for its buyer or end user
 - e) showy, sensible, timely, and anchored in a product, service, or business that creates or adds value for its buyer or end user
- 13 Salary-substitute firms are small firms that afford their owners or owners a level of income similar to what they would earn in a conventional job.
- a) True
 - b) False
- 14 The process of perceiving the possibility of a profitable new business, product or service idea is referred to as:
- a) inspired discovery
 - b) opportunity recognition
 - c) idea confirmation
 - d) inspired detection
 - e) creative recognition

- 15 The term opportunity recognition refers to the process of perceiving the possibility of a profitable new business or a new product or service.
- a) True
 - b) False
- 16 _____ is the process of generating a novel or useful idea.
- a) Innovation
 - b) Vision
 - c) Creativity
 - d) Visualization
 - e) Entrepreneurship
- 17 In the five-stage creative process, the flash of recognition, or what is sometimes referred to as the “eureka” experience, occurs in the:
- a) preparation stage
 - b) incubation stage
 - c) insight stage
 - d) evaluation stage
 - e) elaboration stage
- 18 Which of the following selections is an example of how to discourage creativity at the individual level?
- a) protect people who make honest mistakes and are willing to learn from them
 - b) speculate, be open, and build on others’ ideas
 - c) deal with employees as equals to show that status isn’t very important
 - d) punish mistakes or failed ideas
 - e) listen attentively in order to acknowledge and provide early support to ideas
- 19 The vast majority of small businesses are entrepreneurial firms.
- a) True
 - b) False
- 20 A firm’s _____ is a firm’s plan or diagram for how it competes, uses its resources, structures its relationships, interfaces with customers, and creates value to sustain itself on the basis of the profits it earns.
- a) tactical plan
 - b) business model
 - c) business plan
 - d) feasibility analysis
 - e) strategic plan
- 21 A firm’s _____ is a plan for how it competes, uses its resources, structures its relationships, interfaces with customers, and creates value to sustain itself on the basis of the value it creates.
- a) operations model
 - b) business plan
 - c) business model
 - d) tactical model
 - e) strategic plan

- 22 A(n) _____ is a written document that describes all the aspects of a business venture in a concise manner.
- a) contingency plan
 - b) tactical model
 - c) operations plan
 - d) business plan
 - e) business model
- 23 Two fatal flaws can render a business model untenable from the beginning. These are a complete misread of the customer and:
- a) overemphasis on the importance of industry analysis
 - b) failure to copy the industry leader's business plan
 - c) overemphasis on the importance of feasibility analysis
 - d) utterly unsound economics
 - e) failure to complete a business plan prior to developing a business model
- 24 A firm's _____ describe(s) how it competes relative to its competitors.
- a) core strategy
 - b) customer interface
 - c) core competencies
 - d) business vision
 - e) product/market scope
- 25 An idea is a favourable set of circumstances that creates a need for a new product, service, or business.
- a) True
 - b) False
- 26 The high failure rate among new ventures is due in part to the liability of newness, which refers to the fact that new companies often falter because:
- a) they are underfunded and the founders of the firms don't move quickly enough to put together boards of directors and boards of advisors that can provide them direction and advice
 - b) they underestimate the complexities involved with starting a new business and the firm lacks a "track record" with outside buyers and sellers
 - c) the people who start the firms can't adjust quickly enough to their new roles and the firm lacks a "track record" with outside buyers and sellers
 - d) the people who start the firms can't adjust quickly enough to their new roles and they are underfunded
 - e) they underestimate the complexities involved with starting a new business and they don't move quickly enough to establish business partnerships
- 27 New ventures that are based on strategic value, such as valuable technology, in an industry are attractive, while those with low or no strategic value are less attractive.
- a) True
 - b) False

- 28 Venture capitalists identify five primary criteria for screening business plans:
- a) Market issues, Economic issues, Strategic leverage issues, Management team issues, Fatal flaw issues
 - b) Market issues, Economic issues, Competitive advantage issues, Management team issues, Fatal flaw issues
 - c) Economic issues, Competitive advantage issues, Strategic leadership issues, Management team issues, Fatal flaw issues
 - d) Market issues, Financial issues, Competitive advantage issues, Management team issues, Operations issues
- 29 Higher potential business can identify _____ for a product or service that meets an important customer need and provides high value-added or value-created benefits to customers.
- a) a market niche
 - b) an operating plan
 - c) suitable promotion activities
 - d) none of the above
- 30 Higher potential businesses are those where:
- a) Customers are reachable and receptive to the product or service,
 - b) customer have no brand or other loyalties.
 - c) The potential payback to the user or customer of a given product or service through cost savings or other value-added or created properties is one year or less and is identifiable, repeatable, and verifiable.
 - d) All of the above
- 31 A fragmented, imperfect market or emerging industry often contains vacuums and asymmetries that create unfilled market niches
- a) True
 - b) False
- 32 Fatal flaws for new ventures include:
- a) markets which are too small, and have overpowering competition,
 - b) markets where the cost of entry is too high,
 - c) markets which are too small and where the cost of entry is too high
 - d) a) and b)
- 33 A sole proprietorship is a disadvantageous form of ownership for an accountant wishing to trade as an accountant
- a) True
 - b) False
- 34 Which of the following represents the most appropriate set of dimensions upon which to compare different types of legal incorporation of a new business
- a) Legal persona, number of owners and licence type
 - b) Legal persona, liability, control and authority
 - c) Legal persona, number of owners, control and authority and transfer of ownership
 - d) Legal prescriptions, number of owners and licence type
- 35 If a business has anything to do with making or selling food which can go off, health or entertainment activities, or selling alcohol, it needs a licence
- a) True
 - b) False

- 36 South African licensing regulations could change in terms of the Licensing of Businesses Bill released in early 2013
- a) True
 - b) False
- 37 A business licence is unnecessary if the person makes and sells the food from their home or has a hawker's licence
- a) True
 - b) False
- 38 VAT is only paid by consumers or end users and not producers or distributors
- a) True
 - b) False
- 39 Income tax is only applicable to sole proprietorships and not to companies.
- a) True
 - b) False
- 40 The Labour Relations Act 66 of 1995 sets out the procedures to be followed at the termination of services in the Code for Good Practice, in _____
- a) Schedule 6
 - b) Schedule 7
 - c) Schedule 8
 - d) Schedule 9
- 41 In the event of a worker being unable to return for work due to disability the employer must investigate the nature of the disability but under no circumstances can the employer terminate the services of the worker.
- a) True
 - b) False
- 42 In terms of the Broad Based Black Economic Empowerment Act, the terms 'black company' and 'black empowered company' mean the same thing.
- a) True
 - b) False
- 43 Companies that turn over less than R5million a year are exempt from being "rated" by rating agencies to establish if they comply with the prescriptions of the Broad Based Black Economic Empowerment Act or not.
- a) True
 - b) False
- 44 A company's _____ is (are) potentially the most effective instrument of good corporate governance.
- a) shareholders
 - b) board of directors
 - c) top managers

- 45 The decision function of financial management can be broken down into the _____ decisions.
- a) financing and investment
 - b) investment, financing, and asset management
 - c) financing and dividend
 - d) capital budgeting, cash management, and credit management
- 46 Which of the following financial objectives best relates to a firm's ability to meet its short-term financial obligations?
- a) Liquidity
 - b) Profitability
 - c) Efficiency
 - d) Stability
- 47 Which of the following financial objectives best relates to how productively a firm uses its assets relative to its revenues and its profits?
- a) Liquidity
 - b) Profitability
 - c) Efficiency
 - d) Stability
- 48 A company's accounts payable is money owed to it by its customers.
- a) True
 - b) False
- 49 Working Capital is defined as its current assets minus current liabilities.
- a) True
 - b) False
- 50 Owners' equity reflects the equity invested in the business by its owners plus the accumulated earning retained by the business BEFORE any payment of dividends.
- a) True
 - b) False
- 51 Which of the following best relates to the break-even analysis calculated by an entrepreneur starting a new venture or producing a new product?
- a) The point where total revenue received equals total costs associated with the output of the new venture or product.
 - b) The point at which the new venture or product's assets equals liabilities plus owners' equity.
 - c) The point where the new venture or product's profit equals revenues less expenses.
 - d) The point at which an initiative's cash flows return its initial investment.
- 52 Business Performance Measurement is concerned with:
- a) measuring the efficiency and effectiveness of actions;
 - b) aggregating and standardising information;
 - c) setting appropriate targets.
 - d) all of the above

- 53 Performance measures should be part of a _____ which connects measures for top management, different business units, middle and lower management.
- a) solid growth plan
 - b) consistent performance measurement system
 - c) performance appraisal system
 - d) none of the above
- 54 There is no significant interaction between information technology and human process in business performance measurement in entrepreneurial ventures.
- a) True
 - b) False
- 55 There is only limited applicability for systematic human resource management in entrepreneurial ventures.
- a) True
 - b) False
- 56 Human resource management is the process of _____ a talented and energetic workforce to support organisational mission, objectives and strategies.
- a) financially compensating
 - b) attracting, developing and maintaining
 - c) rewarding and punishing
 - d) attracting and rewarding
- 57 In entrepreneurial ventures the human resource management function does not need to place significant emphasis on developing the abilities of each employee and creating and maintaining morale.
- a) True
 - b) False
- 58 High performance work systems consist of strategically aligned human resource policies, practices and activities
- a) True
 - b) False
- 59 High commitment work practices include:
- a) job enrichment and job rotation
 - b) tactical measures designed to improve productive output
 - c) improved employee development, communications, and disciplinary practices
- 60 Which of the following is not usually associated with a highly motivated workforce?
- a) high quality work output
 - b) high staff turnover
 - c) high work satisfaction
 - d) high staff involvement
-