QID :

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Signature:

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE, NOV – 2025**

Entrepreneurship and Startup

[Maximum Marks: **75**]   [Time: **3** Hours]

PART-A

I. Answer *all* the following questions in one word or one sentence. Each question carries *'one'* mark.

(9 x 1 = 9 Marks)

		Module Outcome	Cognitive level
1.	An "entrepreneur" is a person who organizes, operates, and assumes the risk for a business venture.	M1.01	R
2.	Innovation and Entrepreneurship Development Centre	M1.02	R
3.	Technology Business Incubator	M1.06	U
4.	Autonomous robots, big data and analytics, the Internet of Things (IoT), cloud computing, additive manufacturing, simulation, system integration, augmented reality, and cybersecurity	M2.02	U
5.	Demographic, psychographic, geographic, and behavioral	M2.07	R
6.	A document that outlines all aspects of a project, including its cost, technical specifications, implementation plan, and economic viability. It is used to secure funding and is a crucial part of project planning.	M 3.01	R
7.	Investor pitching is the process of presenting a business idea to potential investors to secure funding.	M 3.07	R
8.	A management approach to reduce or eliminate investments in a product or business line to maximize short-term profit and cash flow	M4.01	R
9.	An entrepreneur's strategic plan to sell their ownership in a company to investors or another company	M4.06	U

PART-B

II. Answer any *eight* questions from the following. Each question carries *'three'* marks.

(8 x 3 = 24 Marks)

		Module Outcome	Cognitive level
1.	Innovation and collaboration Customer centric approach Strong academic ties	M1.03	R

	Supportive policies Access to venture capital		
2.	Kerala Startup Mission Kerala Industrial Infrastructure Development Corporation Technopark	M1.06	U
3.	**Key Functions and Objectives of KSUM:** 1. **Startup Incubation**: 2. **Funding and Financial Support**. 3. **Skill Development and Training**: 4. **Networking and Collaboration**: 5. **Policy Support**: 6. **Mentorship and Guidance**: 7. **Global Exposure**:	M1.07	U
4.	The **Thai OTOP Model** stands for **One Tambon, One Product**. It is a Thai government initiative designed to promote local products and businesses by encouraging each tambon (subdistrict) to develop and market a unique product or craft that reflects its local culture, traditions, and resources. The program aims to enhance local economic development, preserve cultural heritage, and support small businesses and entrepreneurs in rural areas.	M2.07	R
5.	**Design Thinking** is a way of solving problems by focusing on understanding people's needs and coming up with creative solutions. It's often used to create products or improve services. **Stages in Design Thinking:** 1. **Empathize:** 2. **Define:** 3. **Ideate:** 4. **Prototype:** 5. **Test:**	M2.04	U
6.	Small Scale Enterprises Medium Scale Enterprises Large Scale Enterprises	M3.01	R
7.	dos include validating your idea, building a strong team, focusing on customer feedback, creating a business plan, and networking. Don'ts	M 3.04	U

	to avoid following trends blindly, overcomplicating your product, ignoring legal requirements, over-promising, and trying to do it all alone		
8.	Idea grant Student idea innovator grant Productization grant Women productization grant Scale up grant R & D grant	M 3.07	U
9.	A **harvesting strategy** refers to the plan a business owner follows to exit the business and realize the value of their investment. It's essentially how the owner "harvests" the rewards of their hard work and efforts in growing the company. This could involve selling, merging, or passing the business on. 1. Selling the Business 2. Mergers & Acquisitions 3. Initial Public Offering (IPO) 4. Passing to Family or Employees 5. Liquidation	M4.04	R
10.	The **Fail Fast or Succeed (FFS)** approach is a mindset in business and startups that encourages testing ideas quickly, learning from failures, and either refining the concept or pivoting to something more successful. The idea is to accelerate decision-making by not spending excessive time or resources on unproven ideas. Instead, you launch a minimum viable product (MVP), get feedback, and either move forward with a refined version or abandon the idea if it's not working.	M4.07	U

PART-C
Answer all questions. Each question carries *'seven'* marks

(6 x 7 = 42 Marks)
Module Outcome
Cognitive level

		Module Outcome	Cognitive level
III.	**Promote entrepreneurial culture:** Organizes events like Entrepreneurship Awareness Camps, Entrepreneurship Development Programs, and skill development programs. **Idea incubation:** Serves as a center for new ideas, helping students validate them, develop prototypes, and test feasibility. **Support student entrepreneurs:** Facilitates interactions with entrepreneurs for mentorship and helps create entrepreneur's clubs to encourage a culture of entrepreneurship. **Organize competitions:** Conducts business plan competitions, hackathons, and innovation camps to encourage students to develop and pitch their ideas. **Provide practical support:** Offers physical workspace, access to lab facilities, and networking opportunities for promising startups. **Connect with resources:** Helps students connect with potential investors and funding agencies, provides guidance on project reports, and acts as a regional information center for business opportunities and market data.	M1.01	U
	OR		
IV	**Planning**: Developing strategies, setting goals, and outlining plans to achieve organizational objectives. **Organizing**: Allocating resources (time, people, money) and delegating tasks to ensure smooth operations. **Leading**: Motivating, guiding, and supporting team members to reach their potential and meet organizational goals. **Controlling**: Monitoring performance, tracking progress, and making adjustments to stay on course toward objectives. **Decision-Making**: Evaluating information, analyzing options, and making informed decisions that benefit the organization. **Problem-Solving**: Addressing issues that arise within the team or operations, finding solutions, and implementing corrective actions.	M1.02	R

	Communication: Keeping open lines of communication with team members, upper management, and other departments to ensure alignment and clarity.		
V.	A **Dark Factory** refers to an automated manufacturing facility that operates without any human presence on-site. It relies heavily on advanced robotics, artificial intelligence, and automation technologies to perform tasks like assembly, production, and quality control. The concept is designed to improve efficiency, reduce costs, and enhances safety by minimizing human labor and utilizing machines that can work around the clock without the need for breaks or shifts. ● **Fully automated:** All production, and sometimes maintenance and quality control, is handled by robots and machines. ● **Lights-out operation:** Since no humans are needed, the facility can run in complete darkness, saving energy and reducing operational costs. ● **Connected and intelligent:** They use IoT sensors and high-speed networks to enable real-time monitoring, data sharing, and adjustments. ● **AI-driven:** Artificial intelligence guides the robots and systems to perform complex tasks and adapt to changing conditions. ● **Remote oversight:** While humans aren't on-site, they can remotely oversee the operations, monitor processes, and intervene if necessary. **OR**	M2.01	A
VI	Industry 4.0 is the fourth industrial revolution, characterized by the integration of intelligent digital technologies into manufacturing and industrial processes. Pillars of Industry 4.0 1.Automation and Smart Manufacturing: 2.Internet of Things (IoT) 3.Cyber-Physical Systems (CPS) 4.Big Data and Analytics 5.Artificial Intelligence (AI) and Machine Learning 6.Additive Manufacturing (3D Printing): 7. Cloud Computing	M2.02	U

	8.Virtual and Augmented Reality (VR/AR) 9. Digital Twins Benefits ● Increased efficiency and productivity: ● Greater flexibility ● Improved decision-making ● Predictive maintenance ● Supply chain optimization		
VII.	**Campus to Company** and **Company to Campus** are two approaches to building relationships between educational institutions (like universities or colleges) and companies, particularly in terms of recruitment, collaboration, and skill development. **Campus to Company:** This refers to the efforts made by companies to reach out to educational institutions to identify and recruit fresh talent, such as graduates or interns. Companies visit campuses for recruitment drives, conduct workshops, and participate in career fairs to directly connect with students. **Company to Campus:** This refers to initiatives where companies actively engage with educational institutions to offer internships, mentorship, research collaboration, or job opportunities to students. It involves companies taking a proactive role in interacting with educational institutions and helping shape curricula or student development. OR	M2.03	R
VIII.	● Wealth without work ● Pleasure without conscience ● Knowledge without character ● Commerce without morality ● Science without humanity ● Worship without sacrifice ● Politics without principle	M2.04	R
IX.	**1. Patentability Search (Optional)**	M3.05	A

- Before applying, it's good to check if your invention is new and hasn't been patented already. This can save time and effort.

2. File a Patent Application

- **Provisional Application**: If your invention is not fully ready, file this to secure a priority date.
- **Complete Application**: File this when your invention is fully developed.
- You can file your application at any of the Indian Patent Office branches in Mumbai, Chennai, Kolkata, or Delhi.

Documents Needed:

- Title of the invention
- Detailed description of the invention
- Claims (explaining what makes it unique)
- Drawings (if applicable)
- Patent filing fee payment

3. Patent Examination

- After filing, the Patent Office checks if your invention is new, useful, and non-obvious.
- The examiner will send you a **First Examination Report (FER)**. You'll have to respond to any issues raised.

4. Respond to Objections (If Any)

- If the examiner has objections, you'll need to provide answers or modify your application within **6 months** (can extend by 3 months).

5. Grant of Patent

- Once all issues are cleared, the patent will be granted and published.
- You now have exclusive rights to your invention for **20 years**.

6. Renewal of Patent

- You need to pay an **annual renewal fee** to keep your patent active for the full 20 years.

X	**OR** | Aspect	Proprietorship	Partnership
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Owners	One person owns the business.	Two or more people own the business.
Liability	Owner is fully responsible for business debts.	Partners share responsibility for debts.
Decision Making	The owner makes all decisions.	Partners share decision-making.
Profit	The owner keeps all profits.	Profits are shared between partners.
Setup	Simple to start, no formal agreement needed.	Requires a partnership agreement.
Continuity	The business ends if the owner leaves or dies.	The business may continue if a partner leaves.
Taxation	Taxed as the owner's personal income ↓	Partners pay taxes individually on their share of profit.		M3.02	R
XI.	**1. Patentability Search (Optional)** ● Before applying, it's good to check if your invention is new and hasn't been patented already. This can save time and effort. **2. File a Patent Application** ● **Provisional Application**: If your invention is not fully ready, file this to secure a priority date. ● **Complete Application**: File this when your invention is fully developed. ● You can file your application at any of the Indian Patent Office branches in Mumbai, Chennai, Kolkata, or Delhi. **Documents Needed**: ● Title of the invention ● Detailed description of the invention ● Claims (explaining what makes it unique) ● Drawings (if applicable) ● Patent filing fee payment **3. Patent Examination** ● After filing, the Patent Office checks if your invention is new, useful, and non-obvious. ● The examiner will send you a **First Examination Report (FER)**. You'll have to respond to any issues raised. **4. Respond to Objections (If Any)** ● If the examiner has objections, you'll need to provide answers or modify your application within **6 months** (can extend by 3 months).	M3.06	U

	5. Grant of Patent ● Once all issues are cleared, the patent will be granted and published. ● You now have exclusive rights to your invention for **20 years**. **6. Renewal of Patent** ● You need to pay an **annual renewal fee** to keep your patent active for the full 20 years. **OR**		
XII.	Bootstrapping : The most common form of self-funding, bootstrapping means using your personal savings, revenue from sales, or even credit cards to launch and grow your business. Friends and family ("Love money"): Entrepreneurs often raise initial capital from people they know. Because it comes from personal relationships, repayment terms are often flexible. Angel investors: These are wealthy individuals, often with business expertise, who invest their own money in early-stage startups in exchange for equity. Venture capital (VC): VC firms are companies that invest in high-growth startups, typically after a business has already shown some market traction. VCs manage and invest pooled capital from other individuals and institutions. Incubators and accelerators: These programs provide support for new businesses, often including seed funding, mentorship, office space, and networking opportunities, in exchange for a small equity stake.	M3.04	U
XIII.	It is the process of testing and verifying that there is a market demand for a product before investing significant resources. **1. Customer Interviews-** Talk to potential customers to understand their needs and if they would buy your product. 2. **Surveys-** Use online surveys to ask people about their preferences and if they like your product idea. 3. **Landing Pages-** reate a simple webpage showcasing your product idea and see if people are interested by signing up or clicking. 4. **Minimum Viable Product (MVP)- b**uild a basic version of your product with only key features to test with real users. 5. **Crowdfunding-** Use platforms like **Kickstarter** to get people to pre-order your product and show interest. 6. **A/B Testing-** test two versions of your product or feature to see which one people like more. 7. **Beta Testing-** Give a small group of people early access to your product and ask for feedback. 8. **Pre-Orders-** Offer your product for pre-sale to see if people are willing to buy it before it's launched. 9. **Product Demos-** Show a prototype or demo of your product to potential customers and get their opinions.	M4.07	R

| XIV | 10. **Social Media Polls-** Use social media to ask your followers about your product and see how they respond.

OR

Sale-based strategies
- **Mergers and Acquisitions (M&A):** A company is combined with or bought by another company.
- **Management Buyout (MBO):** The existing management team purchases the company from the current owners.
- **Employee Stock Ownership Plan (ESOP):** The company is sold to its employees, often through a trust fund.
- **Secondary Sale:** Selling shares to other investors, partners, or an external party without selling the entire company.
- **Family Succession:** Transferring ownership and leadership to family members.

Other strategies
- **Liquidation:** Selling off all company assets and ceasing all operations, which can be done in bankruptcy.
- **Acquihires:** Being acquired by another company that is primarily interested in hiring the talent of the acquired company's employees.
- **Recapitalization:** Redeploying the company's debt and equity to increase shareholder value or cash payout. | M4.02 | R |

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