

Economics and Policy of Innovation
Written examination – Monday 16th of May 2016

NAME AND SURNAME: _____

ID NUMBER: _____

1. The Silicon Valley represents:

- ☐ An example of the Marshallian Industrial district.
- ☒ An example of intense and informal learning network, similar to the Marshallian Industrial district.
- ☐ An example of future technological relations between firms and universities.
- ☐ The old economy at the NASDAQ.

2. What is the Pavitt taxonomy?

- ☐ A synonymous of product/process innovations distinction.
- ☐ A synonymous of the high-tech/low-tech distinction.
- ☒ A way to classify economic sectors.
- ☐ A way to classify technology policies.

3. The heterogeneity in the innovation process implies that:

- ☒ Firms that specialize in some technological fields reflect the nature of these fields of knowledge.
- ☐ Without innovations, all firms would produce the same goods.
- ☐ Large firms innovate more than small firms.
- ☐ Firms produce heterogeneous products.

4. The Community Innovation Survey is:

- ☐ Another name of the R&D Survey.
- ☐ A questionnaire by the European Commission / OECD on firms' patenting activity.

- Based on the recommendations appeared first in the Oslo Manual in 1992.

- The Italian Survey on firm innovation activity.

5. Patent Statistics give useful information on:

- The R&D intensity of firms.
- The protection of inventions by single entrepreneurs.
- Most advanced countries, as they are available only there.

- New technologies appearing in new inventions.

6. Which sentence is true, when we talk about the effects of IP regimes:

- Patents play the same role in all sectors.
- Abolition of patents would probably have small effect in most industries (excluded pharmaceuticals and chemicals).
- In emerging industries characterized by relatively low innovation costs and strong “first-mover advantages”, firms are very sensitive to free-rider problems and “waiting games”: that tends to increase the importance of patents.
- According the Bayh-Dole Act, in the US firms can apply for patents only in some sectors.

7. The “Financing growth cycle” theory:

- Affirms that during early stages of firm development, there are more difficulties for raising external finance (mainly due to asymmetric info), but empirical evidence seems not to confirm this assumption.
- Affirms that, during early stages of firm development, there are less difficulties for raising external finance than in mature stages of firm development.
- Is a theoretical approach deeply rooted in the evolutionary economics and does not consider asymmetric information as a key explanation.

- Affirms that Public Venture Capital is the most convenient financial tool to overcome credit crunch gaps.

8. Governmental Venture Capital (GVC):

- Might crowd out Private VC and induce underperformance of GVC-backed firms due to lower GVC engagement in coaching and value-adding activities.
- Tends to require reduced skill to be backed than Private VC.
- Tends to anticipate the exit also from those ventures that might generate social returns or exert positive impacts on the economic system.
- Has never been adopted in Australia or in other Anglo-Saxon settings.

9. The constituents of a System of Innovation are:

- R&D and Innovation.
- Firms and the Public Sector.
- Components and relations among components.
- Organisations and institutions.

10. The System of Innovation approach:

- Has been developed by Schumpeter.
- Is a Neoclassical approach.
- Links low-tech and high-tech sectors.
- Has been developed in the 1980s and 1990s.

11. Talking about innovation in the service sector, which are the true statements?

- The adoption by services firms of technologies produced in other sectors is a negligible form of innovation in the sector, much of which thus does not display “supplier-driven” characteristics.
- Services have often emulated manufacturing in the adoption and development of an organizational innovation based on quality control

procedures, but it is not demonstrated that innovation in services typically follows a Reverse Product Cycle.

- Interactivity induced innovation is negligible in the service sector.
- Knowledge Intensive Business Services are mainly global players and rarely support transfer of locally-specific knowledge, embedded in local networks (e.g, universities), between actors in regional innovation systems.

12. When we talk about sectoral innovation and specifically “technological regimes” (Nelson and Winter), which components should we take in consideration?

- Level of patenting and “High Tech” intensity of the sector.
- Appropriability conditions and degree of cumulativeness of technological knowledge.
- Strong public intervention regime (sectoral Venture Capital) and public supported research programs.
- R&D intensity and number of employed people in R&D functions.

13. What is a Regional Innovation System?

- The development at the subnational level of the Innovation System concept.
- An example of innovative industrial district.
- A Neoclassical theory.
- The link between R&D performers, small innovative firms and universities in a localised area.

14. If we are talking about innovation in Low Medium Technology (LMT) industries, what is the false statement among the following ones?

- Firms in LMT industries are basically using rather than selling technology.
- Innovation often refers to dynamic economies of scale targets.
- Knowledge search, identification and proof, rather than basic research, are important to innovation in the non-manufacturing activities of LMT industries.

- “General Purpose Technologies” are rarely able to provide new opportunities for LMT industries to enhance their innovative and economic performance through new technologies.

15. With regards to the relation between Innovation and Employment, jobs losses are more probable:

- In poor countries.
- In innovative firms.
- In low-tech sectors.
- In association with process innovations.

16. In the work by Solow (1957), “neutral technological change” means that:

- Technology is not relevant for economic growth.
- Technology is exogenous, while growth is endogenous.
- Labour and capital productivity is equally improved.
- Technology does not contribute to the increase of GDP.

17. The role of technology in the catching-up process:

- Has been a problem of Asian and African countries in the XIX and XX century.
- Has altered the conditions for industrialisation in European latecomer countries in the XIX and XX century.
- Has appeared for the first time in the XVIII, and has been studied by Adam Smith.
- Can be analysed in a Schumpeter Mark I framework.

18. Which of the following countries have had a successful technology catching-up process in the second half of the XX century?

- China and Mexico.
- Singapore and Taiwan.
- Italy and Germany.

- India and the Soviet Union.

19. The quantity and quality of students and researchers, as well as the role of universities, are key elements especially for:

- Science policy.
- Technology policy.
- Innovation policy.
- None of them.

20. What is meant for “international exploitation of national innovations”?

- That firms employ low-wages researchers abroad.
- That innovations are generated more and more globally.
- That firms export innovative goods.
- That innovations in a country attract foreign multinationals.

21. When Adam Smith states that the division of labour “improves dexterity and saves time”, we can say he refers to:

- The success of the US firms in catching-up with British ones.
- The production of textiles as compared to other sectors in England.
- The concept behind process innovation.
- The critics he moved to other economists such as David Ricardo and Karl Marx.

22. In the globalization of innovation, what is the difference between asset-exploiting and asset-augmenting strategies? Justify your answer in 10 lines maximum.

- No difference, as firms do both.
- Asset-exploiting is performed by multinational corporations only.
- With asset-augmenting, firms might acquire foreign knowledge.
- Asset-exploiting concerns patents, asset-augmenting concerns R&D.

[illegible]

23. What is the Smart Specialisation Strategy? Comment your answer in 10 lines maximum.

- A strategic behaviour of EU firms.
- The regional law for science and technology policy.
- A policy tool developed in the European Union.
- The industrial specialisation of advanced countries.

[illegible]

24. The US managerial corporation at the beginning of the XX century inspired the “Schumpeter Mark II model” because:

- It was large.
- It invested a lot in innovation.
- Its growth and structure allowed to overcome the Marshallian view of the entrepreneur/inventor.
- It took advantage of the US dominance after World War II.

Please recall the most relevant differences between “Schumpeter Mark I” and “Schumpeter Mark II”, in 10 lines maximum.
