# MARK SCHEME for the May/June 2009 question paper

# for the guidance of teachers

## 9713 APPLIED INFORMATION & COMMUNICATION TECHNOLOGY

**9713/03**       Paper 3 (Written B), maximum raw mark 80

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**1** **(a)** Any **five** points from:
 send out questionnaires/surveys to **target groups**
 carry out personal interviewing in shop/street
 carry out telephone/email surveys of **target groups**
 … using a computer based script
 web sites/pop-ups – ask views/collect information online
 monitor sales of items from shops
 research results – competitors/academics/consumer trends
 target groups log on to discussion board (i.e. forum) to give their opinions
 input results from questionnaires using ICT e.g. OMR reader
 store all the information on a database …
 … and *(later)* analyse the information
 produce a report showing results of surveys

 Do not penalise more than **once** for not using the scenario [5]

 **(b)** **One** mark for each design item + **one** mark for description:
 specify what hardware is needed…
 … volumes of data handled will determine the choice of hardware
 specify what software is needed…
 … web shop features will determine the choice of software
 design the validation rules…
 … form of input and file structures will determine validation tests
 design the file structures…
 … will be determined by what is stored, type of data, etc.
 design of DFD…
 … showing the flow of data through the system
 design report layouts…
 … e.g. customer receipt, stock report
 design backup system…
 … routines/hardware required [6]

 **(c)** **One** mark for describing each strategy + **one** mark for reason related to the scenario
 parallel running…
 … to enable both systems to operate together and integrate both/there is a back-up
  system if the new one fails
 pilot scheme…
 … this enables one area/shops change to new scheme/until new system proven
 phased implementation…
 … (one area is changed over and) gradually spreads throughout the company [4]

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**2 (a)** Any **six** points that relate to a music web site from:
shopping basket/list of purchases
secure buying when using a credit card
"when customers bought X, they also bought Y" facility
search facility for artist/title/genre
e-voucher purchase/gift option for someone else
wish list
suggestions for user based on previous purchases
order history/ability to track status of orders
delivery options
ability to listen to tracks/see video clips
reviews of albums/films/books and listing of tracks
recognise customer as soon as they log on/saved customer details/customised pages
option to select different languages/currency conversion
links to other music sites/genres
news page e.g. new releases                                                    [6]


**(b)** Any **four** points from:
ability to send an email with query
frequently answered questions (FAQ) section
online help chat/email system
telephone call centre
operators provided with a script to assist customer
drop down boxes with helpful hints/automatic advice
help wizards
company contact details for snail mail/to visit                                [4]


**3** Any **three** with the identification and the expansion from:
worsens the digital divide… due to some people not having ICT resources
changing job patterns in high street shops… fewer customers on high street/more ICT based jobs/fewer unskilled jobs
identity theft… deleting/amending/distributing personal details
open to computer fraud… money taken from credit cards/goods intercepted from online order details/hacking into systems
more addictive… easy to spend too much
lack of socialising/exercise/try before you buy… plus expansion                [6]


**4** Any **four** points from:
 (Gannt charts) show all stages/tasks to be done
 (Gannt charts) show the critical paths(s)
 (Gannt charts) show key project milestones
 (Gannt charts) also show:
     – number of days to do tasks
     – progress on tasks as % complete
     – progress versus expected time to do work
     – how tasks are all linked together
     – how financial targets are being met
allows emailing of tasks/project information to others automatically/post to website or download project information
allows use of PERT charts
allows use of resource graphs                                                  [4]

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**5 (a) (i)** Any **two** points from:
           thin layer of powder sprayed from ink jet spray head
           machine repeats process building up layer after layer to form object
           it uses slicing (tomographic) technology
           places a binder/glue during the layering process
           can use plaster or ceramic in powder form            [2]

    **(ii)** can handle/see components (before expensive tooling up)
           less expensive than making a model by conventional methods
           can test model (before expensive tooling up)          [2]

  **(b)** **One** mark for device + **one** mark for reason:
           graph plotter
               – produce large scale drawings on paper
               – very accurate drawings on paper to any scale
           large screen
               – to allow development of new designs/products
               – allows enlargement of components
               – allows use of light pens (etc.)
           second monitor
               – to show commands            [4]

**6 (a)** Any **two** points from:
         computer files can be updated in real time
         can be set up at short notice to overcome crises
         regular meetings become viable
         initial hardware costs are offset by savings in travel costs
         safety aspects – no risk of kidnapping/terrorism
         no travelling time required away from office hence more productive     [2]

  **(b)** Any **five** points from:
         increase in terrorist attacks has driven the need for video conferencing
         faster communication/broadband connections
         wider availability of high speed links
         companies have tended to become global
         faster processors in computers now allow for jerk-free images
         multi-screen technology
         general improvements in technology has lowered costs/improved image quality    [5]

**7**     **(i)**   hubs

used to connect computers to server/computer
not very efficient network device
sends data to all linked devices
may amplify received signal
works at MAC level                                              [2]

      **(ii)**   routers

gateway device
links LANs to make a WAN
includes a firewall
directs packets according to their IP address
stores list of connected devices
redirects packets to correct switch/hub
translates protocols (between networks)                          [2]

    **(iii)**   switches

an advancement on a hub
directs the data stream only to the addressed device
prevents congestion on segment of network
uses a list of device addresses
redirects 'ack' packet directly to sending computer
works at MAC level

    **(iv)**   telnet

is a protocol (internet)
used to gain access to another users computer/remote access to server
used to transfer/access data
requires a password login id
lacks security
uses TCP/IP protocol (as a lower level)                      [2]

**8**    **(a)**   Any **two** points from:

system produces most efficient route
company can save fuel/less wear and tear on vehicles
company will know nearest driver in case of urgent pickup
drivers save time in planning journey/driving hours
able to give customers better predicted delivery times
can be uploaded to a SatNav                                   [2]

   **(b)**   Any **five** points from:

gather information from maps, drivers, etc.
key information in to the knowledge base
knowledge base contains information about routes (e.g. distance between locations)
create the rules base which stores relationships between locations etc.
create the inference engine which does the logic processing
determine the input data/method required
test the system with known current routes
GPS route data added to knowledge base
develop validation rules
determine the output/means required when new or better routes found, update the system/upload new road information e.g. roadworks
feedback on success of route after each journey                  [5]

9 **(a)** Any **four** points from:
   set up a web site to promote the business
   send emails (automatically) to customer base
   producing hard copy advertisements using DTP
   advertising on large screen display e.g. football ground live display
   popups on web sites
   advertising/links on other web sites/Pixel Advertising
   buy email distribution lists
   producing podcasts
   create blogs/twitters
   production of adverts for (cable/Digital) tv ...                                              [4]


**(b)** Any **four** points from:
   to target appropriate customers
   create standard document using fields from customer database using customer data
       base as the data source
   query the data base for appropriate customers
   use of mail merge wizards
   when merged each document is personal to that customer
   also use mail merge facilities to address envelopes/create labels                              [4]


10 **(a)** Any **two** points from:
   information is specific to company that are not in the public domain e.g. sales figures,
       social events, company news announcement
   personnel directory with telephone numbers, email address
   stop staff using the internet for their own purposes
   control pages uploaded/downloaded on server
   access to templates/common files
   book video conferencing suite/meeting rooms                                                    [2]


**(b)** Any **five** points from:
   firewalls to monitor/stop unauthorised traffic
   encryption of sensitive data to fulfil legal requirements
   user ids/password/biometric device to establish user access rights
   anti-spam software uses filtering to automatically delete junk mail/reduce unnecessary
       traffic on network
   anti pop up software denies unwanted sites
   anti-spyware software stopping cookies/keylogging
   anti-adware software to stop unwanted material

   Note: mention of internet security suite merits just one mark unless broken down into
   components                                                                                      [5]